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ART. CXXVI.—REVIEW *of Encyclopedia of Plants, Comprising all the plants indigenous, cultivated in, or introduced to, Britain.* Edited by J. C. Loudon, F. L. S. &c. 1 vol. 8. vo. 1159 pages. London 1829. *New-York price* 25 *dollars.*

We congratulate the Amateurs of Horticulture on the appearance of this work, and like some others from the hands of its distinguished Editor, it might properly take the motto of "*multum in parvo.*" It contains the generic and specific characters of 16,712 species, with wood engravings of nearly 10,000 plants.

The value of this work is not determined by its bulk. By means of abbreviations and characters ingeniously contrived for this purpose, *on one line of an octavo page* is given, besides the scientific and English name of the plant, eleven interesting particulars.—1. Its habit, being one of 23 forms. 2. Its duration and habitation, whether in the open ground, greenhouse, &c. 3. Its popular character, 1 of 12 particulars, such as ornamental, culinary, &c. 4. Its height, or length of the stem. 5. Time of flowering. 6. Colour of the flowers. 7. Native country. 8. Year of its introduction into Britain, or its *habitat*, if indigenous. 9. Its mode of propagation, whether by grafting, suckers, &c. 10. The most suitable soil. 11. A reference to the work where it is figured and described at greater length. We give one example: *Canna patens*, spreading Indian Shot. 1. Evergreen herbaceous plant. 2. Green-house. 3. Ornamental. 4. two feet high. 5. Flowers in May. 6. Flowers reddish yellow. 7. From Rio Janeiro. 8. Introduced in 1778. 9. Propagated by dividing the roots. 10. Soil, rich mould. 11. The Botanical Register, 576.

The specific character is given on the right hand page. The figures are on both pages, rather below the middle part, and underneath are the remarks on the Etymology, Culture, &c.

Some idea of the labour bestowed on this work may be learned from the suggestion, that more than seven years were employed by the draughtsman and his assistants in preparing the figures. These are generally from 1 to 1½ inches long. We are told that the power of the late James Sowerby to represent the general features of plants within the compass of a few inches, has never been possessed in the same degree by any other individual than the late Sydenham Edwards; and that the sons of the former, (one of whom was the draughtsman for this work) inherit his talents and reputation.

The descriptions of plants cultivated in gardens, have been scattered through so many different Floras, generally beyond the reach of young botanists, that many of the names were become traditionary, and many mistakes among nurserymen, were the consequence. To Horticulturists, who wish thoroughly to understand their business, we recommend this book as the cheapest that they can purchase.

Some errors, as might be expected in a work of this magnitude, appear; and though to note them is an ungracious task, our remarks may be useful in a second edition.

Page VIII. *Marsh!* Catesby.

p. 321. "Vaccinium.—The species are neat little evergreen undershrubs." Yet the mark for "*deciduous shrub*" is properly affixed to the greater part of the species.

p. 252. Amaryllis formosissima is a native of (not North, but) South America. See J. B. Ker's review in the Quarterly Journal of the Royal Institution, and Edinburgh Encyclopedia, Art. Botany.

p. 356. *Kalmia angustifolia* is marked 5 feet. It is a low shrub in its native wastes. Elliot says "A shrub generally about 2 feet high." Torrey "A shrub seldom more than 2 feet high."

p. 359. "*Rhododendron maximum* continues flowering great part of the year." We have often traversed its native wilds, but have seen nothing to confirm this statement. Like *Kalmia latifolia* (respecting which a similar mistake occurs,) it has one fixed and short period of flowering.

p. 454. "*Potentilla.* All the species are pretty, and deserving cultivation." We dissent from this opinion. *P. norvegica* is an unsightly weed, and *P. anserina*, though pretty, is more difficult to extirpate from a garden than the Canada Thistle. *P. tridentata* is marked "deciduous and herbaceous."

p. 478. "Liriodendron tulipifera is unfit for boards or planks." Except in the pine districts, perhaps no timber is so much used for *boards and planks* in the western parts of New-York, as the tulip tree, there called *white-wood.*

p. 525. *Bartsch*, the friend of Linnæus, is called *Batsch.*

p. 534. *Angelonica salicariæfolia* is marked *hardy.*

p. 543. To many of us Americans, the following will be *a new thing.* "The dried root of *Dentaria diphylla* is used instead of mustard by the Americans, under the name of *pepper-root.*"

p. 603. "*Polygala senega*—was the antidote employed by the Senegare Indians against the bite of the rattle-snake." The name "Senegare" if ever in use, is now obsolete.

p. 618. *Clitoria virginiana* is marked as a hot house plant. It is a hardy perennial in New York. It is also called "*small flowered.*" Pursh says "flower large," and Nuttall "The largest papilionaceous flower in the United States." Genera, Vol. 2. p. 118.

p. 197. "*Asclepias syriaca* is very odorous, and in Canada, when in flower, charms the traveller, especially when passing through woods in an evening."

p. 227. "*O. japonicum*" should be *O. aquaticum.*

p. 176. "Oswego tokay?"

p. 272. *Brodiæa grandiflora* is marked as a native of Georgia. Pursh calls it *the Missouri Hyacinth.*

Nuttall says "on the plains of the Columbia and Missouri. M. Lewis, [the discoverer.] The only species of the genus."

p. 474. "The ancients who were acquainted with chemical poisons." It ought to be *not* acquainted, &c.

p. 600. "*Adlumia.* A name unexplained by its author M. Rafinesque Schmalz." We had long since understood that a genus had been dedicated to Major John Adlum of the district of Columbia, so distinguished for his success in the cultivation of the Vine; but we believe no American botanist has *adopted* the name.

p. 227. "*Rhus aromatica*—was made into a distinct genus called *Schmaltzia* by Desvaux and Turpin*ia!* and afterwards *Lobadium* by the ingenious M. Rafinesque Schmaltz." Of the identity of Rafinesque Schmaltz (a botanist mentioned by Muhlenberg) with Constantine Samuel Rafinesque, late professor in the Transylvania University, we know nothing; but it is queer that a gentleman should be called by a name which he has not used at least for 12 or 15 years. As early as 1817, a member of the New-York Lyceum, was known by the latter name, and in his Review of Nuttall's Genera, speaking like an editor in the plural he says "Rhus aromatic*us* is our *Lobadium*." Again, "our labours and those of C. S. Rafinesque are identical." Further, "*Coryadalis* fungosa is the type of an intermediate genus, called long ago *Adlumia* by Rafinesque" (speaking of himself in his usual manner.) *Let him be known by the name which he uses.*

p. 691. "*Marshallia.* Named after Henry Marshal, an Englishman, *author of a sort of History* of the trees and shrubs of North America, published in 1778." This is an extraordinary mistake, and indicates less care than the high character of this Encyclopedia requires. It was named by Wildenow after Humphry Marshal, proprietor of a botanic garden in Pennsylvania, and author of *Arbustrum Americanum*, published in 1785. The following paragraph is from Darlington's *Florula Cestrica*: "A like injustice occurs in the same work [Michaux Flora] in relation to *our worthy countryman Marshall*, in the appropriation of the genus *Marshallia* to Dr. Persoon. But Persoon had in the mean time been complimented with another family of plants, which it seems, he prefered; and so when he published his Synopsis, instead of restoring our *Marshallia* to its rightful owner, he reiterated the offence in a still more glaring manner, by transfering the genus to a German of the name of Trattennick, notwithstanding [he] had been provided for by Wildenow.

We were surprised to find so few traces of an acquaintance with American botanists. To say nothing of many others, Bigelow, Elliott, W. P. C. Barton, Eaton, and Torrey, have produced elaborate works, and have merited the respect of all true friends of Science. Yet so little appears to be known of the last naturalist, that even his name is misspelled, *Tourey*. The nomenclature of *the Encyclopedia of Plants* might have been much improved by their labours.

Pursh's Flora has been chiefly used or quoted for American plants discovered during his stay in this country; and in this Encyclopedia many species are improperly placed to his credit. When a botanist has discovered and described a new genus or species, and imposed and published a proper name, the *honour* of having added to the general stock of knowledge, *becomes his property* and cannot justly be given to another. Whenever a name, therefore, is cited as an authority for such genus or species, *it should be the name of the discoverer*, and not that of a mere copyist who transcribes what another has written. No candid botanist can dissent from this rule, and none will disregard it, who duly considers and respects the rights of others.

It appears that in the year 1811, Nuttall and Bradbury accompanied an agent of our government, up the Missouri as far as the Mandans; and as the Sioux were then at war with the United States, the researches of these botanists were "made *at the most imminent risk of personal safety.*" On their return, some of Nuttall's discoveries were communicated to Pursh, who had, or soon after, passed over to Great Britain, and published these, with other species claimed by his American friends, in his Flora as his own.

On this occasion, we observe a difference in the language of those who felt themselves injured by Pursh. Nuttall speaks of his "*unfortunate want of fidelity*," and Rafinesque says "Pursh has pilfered from [me] the plant and the name." And in another paper he uses the words "copied or stolen." We have no design to insult the memory of Frederick Pursh, but that injustice of which he laid the foundation, is continued after his death.

In the work before us, Nuttall's Genera of North American Plants, is not even refered to. It would be sufficient to credit Pursh with all those species of which he came *fairly* into possession, whether they were given to him by Lewis or Bradbury, or whether he found them while in the employment of American gentlemen. We therefore reccommend to the proprietors of the *Encyclopedia of Plants*, in their next edition, to "give honour to whom honour is due;" and for

Andromeda speciosa of Pursh,	write A. speciosa of Michaux.
Alisma trivialis, Ph.	A. subcordata of Rafinesque.
Batschia gmelini, Ph.	Michaux.
———longiflora, Ph.	Nuttall.
Bartonica ornata, Ph.*	Nuttall.
Drosera filiformis, Ph.	Rafinesque.
Elæagnus argentena, Ph.	Nuttall.
Gerardia quercifolia, Ph.	G. glauca of Eddy.
Jeffersonia diphylla, Ph.	B. S. Barton.
Lupinus perennis, Ph.	Linnæus.
Oxycoccus macrocarpus, Ph.	Persoon.

&c. &c. &c. &c. &c. &c.

We think there is a want of courtesy and of a strict sense of justice in the following.

p. 351. "*Hoffmanseggia*, Named by Cavanilles after John Charles Hoffmansegg, *whom he calls* a distinguished naturalist. It may with *some* propriety be employed to commemorate the merits of the present

* Mr. Pursh, before he had perused the notes which I had made from the living plant on the Missouri, with an intention of rendering them public, had not then by his own acknowledgement, any thing like materials for publishing this genus; my friend A. B. Lambert Esq., Vice President of the Linnæan Society, can also aver the truth of this statement. Mr. Pursh merely possessed an imperfect capsule of the plant which M. Lewis had collected while descending the Missouri. Nuttall's Genera Vol. 1. p. 208.

distinguished Count Hoffmansegg."

And under this head we place such remarks as the following.

p. 328. "*Seriana*, Named by Schumacker after *one Paul Serjeant.*"

p. 360. "*Gaultheria*, Named after *one Gaulther.*"

p. 174. "Pinckneya. So named by Michaux, after some American gentleman of the name of Pinckney *who is now forgotten.*" This was General Charles Cotesworth Pinckney. See Elliott's Sketches. Vol. 1. p. 269.

We pass to other things.

In the 5th column, which gives the popular character, the abbreviations *rk, el, ec, cu, ro, pr*, ft, occur, (and some very frequently) without any explanation. It is true, we Yankees, can *guess.*

A list of known plants not yet introduced into Britain would enhance the value of this work, and direct the attention of British collectors to such *desiderata.* Of this kind would be *Calochortus elegans, Erythronium albidum, Nuttallia digitata et pedata, Paronychia dichotoma, Seymeria macrophylla, Silene rotundifolia et Baldwinii, &c. &c. &c.*

It appears by the following that the milder winters of England are not so favourable as our climate, to some plants which are natives of the warmer parts of the United States: "*Spigelia marilandica* is rather difficult to preserve. It sometimes survives the winter when planted in the open ground." It is perfectly hardy in the western part of New-York.

"*Dodecatheon meadia*—is not easily kept; but thrives better in a shady and rather moist situation than in pots." We have cultivated this plant for 5 years in good garden mould, exposed to our hottest suns and hardest frosts without injury, except the flowers, like tulips, sooner wither in sunshine.

The cheerfulness induced by the study of Nature is noticed in the case of "John Falk—who followed Pallas during his journey in Siberia. Upon his return he commited suicide; perhaps the only instance on record of suicide among Naturalists."

"A shell taken from the bulb, with a leaf on it, and planted in a pot of mould, will produce a bulb, as will almost any bulbous rooted plant." We had plants from the *leafless scales* of the lilly when placed in vegetable earth and kept moist.

"*Erythronium americanum*—will not flower unless confined and prevented from wasting its vigour in long subterraneous surculi." *E. albidum* with white flowers is not noticed. It flowers freely in strong loam or in a mixture of clay and vegetable earth.

"*Lilium.* None of the species can be safely transplanted after they have pushed leaves, without weakening them, so as to prevent their flowering for several years. This remark, indeed, will apply to most bulbous rooted plants."

"The treatment of the *Dahlia* bears a close resemblance to that of the [sweet] potatoe, and the marvel of Peru; as soon as the frost has blackened the tops of these three plants, their roots require to be taken up, and kept in a dry place where the frost cannot get at them till spring."

"*Oxycoccus macrocarpus* furnishes the cran-berries sent from America. Peat earth is essential to every mode of culture; but a much less degree of moisture will do than was at first believed. Salisbury found it do very well in pots of bog earth set in the shade; and Milne found vigorous shoots and abundant crops produced on dry beds of peat earth even in the warm summer of 1822."

"The common garden *Hydrangea hortensis* is quite a marsh plant, and should have a very copious supply of water in summer. A large plant will consume 10 or 12 gallons of water daily, in warm weather.—To flower freely, not more than 3 or 4 strong shoots should be allowed from the same root."

"*Bartonica [ornata et nuda.]* Beautiful plants with alternate pinnatified rough glauceous leaves, and large white flowers, which open during the night, and spread a most agreeable odour. Very rare if they yet exist in collections."

"Most cultivators cut off many of the leaves and shoots of layers, when they are first taken off, thinking the roots will not have so much to nourish, which is the very reason they often loose great part of their crop; layers of any kind of shrub whatever, when first taken off, should not have a single leaf taken off till they have made fresh root: supposing their tops flag ever so much, as long as there is life, it will draw up the sap, and help the plant to root afresh."

"*Water-cress.* A running stream of clear water is essential to its cultivation; in the bed of the stream, the plants are inserted in rows in the direction of the current. In Hertfordshire, there is a fine stream of water on a chalky bottom, in which one cultivator grows 5 acres, and sends a supply to London every day in the year Sundays excepted. There are also large plantations at——other places."

We have not noticed all the errors we observed; and but a few of the numerous passages which shew the great difference of climate between this country and Britain. Our extracts indicate what a treasure horticulturists will possess in this volume. T.

[For the New York Farmer.]

Art. CXXVII. *French Society of Universal Statistics.*

Statistical knowledge has been defined to be *the Art of Preparing and Presenting an Exact Inventory of Things Remarkable and Truly Existing in a State.* It has been a subject of complaint, that its limits have been too local and restricted. By generalizing it, the investigation may, it is conceived, be made to embrace the elements of all the sciences; that concentration of stated facts, which may be considered as the philosophy of the sciences; and that application of all theories and results to the practical wants of society. These ends, it has been supposed, could be more effectually answered by Associations where many men act in concert, than by individual exertion.

For the accomplishment of these enlarged objects, the *French Society of Universal Statistics* was instituted in November 1829. Among the Grand Officers are the Dukes of Orleans, Chartres and Bourbon. The President is Count De Laborde. The President of the Board of administration is Cesar Moreau.

The objects of their labours are divided into two classes: 1. *In relation to things*; to collect and diffuse through all classes of society, a knowledge of the facts proper to guide men to all their interests, whether these facts belong to moral, physical or civil orders; having relation to the territory, the population, or the social body; and tracing their anterior condition as

well as the present; to gather, put in common, and compare facts for the purpose of finding their intrinsic value and importance, without speculating on their causes; to reason upon absolute facts, which are not the subjects of any political controversy, but never upon hypothesis; and to leave to experience alone the charge of demonstrating false that which is false. Such is the sphere of its operations in this branch.

2. *As regards Men*; to adopt as a foundation, the great principle of general civilization; that reciprocity of obligation which exists between all countries, the interchange among all of the advantages of the labours of each, and the communication of all important facts and truths; to establish as well within as without, an alliance of one body with another, and of useful men to useful men; to respect all the conveniences of location; and to present the remarkable phenomenon of a Society which without the distinction of party, school or system, mingles for common utility, the information and zeal of men partaking of all possible shades of opinion.

For promoting general Statistics, and consequently, as is distinctly observed, all the branches of human knowledge, it is proposed to maintain a correspondence with learned bodies, and with their members individually; and to publish, 1. a collection of its transactions; 2. Such works as it shall have rewarded: 3. A collection of printed or manuscript documents addressed to the Society, and of such as it may select from other publications, such as memoirs, reports, and works ancient and modern, written in French and foreign tongues.

[For the New-York Farmer.]

ART. CXXVIII. *Translations from the Annals of Cuba.*

This valuable periodical continues to be published monthly at Havannah. The able editor perseveres with industry and ability in his undertaking. The number for May, making the 35th in the series, has come to hand. It maintains the character it had acquired, for the select and diversified nature of the matter it contains. Indeed the editor, from his own resources, and the extensive correspondence he has established, may be considered as having enlarged the plan of his work. Professor de la Sagra deserves great credit for having conceived the design of the work, and for the success with which he has conducted it.

The number now on the table, contains, among other articles, the following, to wit; general ballance of the commerce of the island of Cuba; an extract from the *bibliotheque universelle* of Geneva, by M. de Candolle on Botany; on the origin of Asafœtida and gum ammoniac, the former of which is refered to the *Ferula persica*, and the latter to the *Ferula ammoniacum*; a notice of the *lainco-root* of Brazil, a species of *Chiococca*, lately received in Europe from that part of America, as a remedy against dropsy; theory of ascending springs of water, with two plates; improved method of preparing leather in England by means of a decoction of bark; on the making of bricks in Holland; the successful enterprize of M. Perrotet, by order of the *French* minister of marine, to carry from Guadeloupe to Senegal, the Nopal or Cochineal plant, and place it in the national garden of naturalization there; various interesting notices concerning the doings in Russia, Poland, Austria and Spain.

It would be highly gratifying to ourselves, and it is not doubted, to our readers, to give translations of some of the more important pieces in this collection, but our restricted limits forbid. S. L. M.

(For former notices of this work, and its author, see our own work Vol. 3. page 28.)

[About seventy pages of the last number of Louden's Magazine are occupied with essays on Cottage Gardening. We extract one of them, presuming that every one of our readers who owns a spot of ground will be repaid for his trouble in reading it, although the subject is not as applicable to this country as it is to Great Britain. Our countrymen, however, have yet much to learn respecting the value of a few roods of ground. One of our practical gardeners of this city lately told us that he expected in one or two years to pay the rent of his house, from the product of the grape vines in his yard, the whole lot being only 100 by 25 feet. ED.]

ART. CXXIX.—*On the Extent and Culture of Cottage Gardens, with and without cows, and on Brewing, Baking, and other points of the Husbandry of the Cottager.* By a PRACTICAL GARDENER.

Sir,—In attempting to digest a plan of cottage economy for a labouring man, its utility will chiefly depend on its simplicity. To accomplish this as well as I am able, I will arrange and consider the departments as they naturally occur in practice, beginning with the man himself, as the primary cause of enquiry, and proceeding in the following order, viz.—

1. A Man, Wife, and three or four Children; Cottage and Garden; making Bread, and brewing Beer; Provision for a Pig; Hog-tubs; Sty, cesspools, and Pig; Fowls and Ducks; Cultivation of the Garden.
2. A Man, Wife, and seven or eight or ten Children; a Cow; Advantages of keeping a Cow; Ground necessary to keep one, and its Culture; Rabbits and Pigeons.

1. *A Man, Wife, and three or four Children.*—It would be a libel on human nature to suppose that any young man, about to enter the married state, is totally indifferent to the consequences likely to arise from a change of such magnitude. He must naturally expect a young family; and for this young family it is his imperative duty to make a provision. He must expect, likewise, that year after year, the wants of his family will be continually increasing; and, consequently, demanding greater and greater sacrifices, with increasing exertions on his part; and that these sacrifices and exertions will be required of him, not merely for a short season, but for almost an unlimited, or, at least an indefinite period. These weighty considerations, one would reasonably suppose, would induce any man of ordinary prudence to examine into his "ways and means;" and if his little stock of money is low, as is too frequently the case, let him immediately begin to hoard week after week, with unremitting care, *every six-pence*; for, after all his care, he will still find great difficulty in answering the demands made upon his pocket by such an eventful change. He must provide a cottage and furnish it;

he must have a garden to produce vegetable for himself and family, with nearly as many more as will keep a pig. With these to make a beginning, (and they ought to be considered indispensable) a poor man, may by great industry and good management (to teach him the latter is the object of these remarks,) contrive to rear a family of 3 or 4 children, and live with his wife in comparative comfort and respectability. While on the other hand, when a man is so unfortunate as to be drawn into a hasty and improvident marriage (and this is too frequently the case,) his friends are probably displeased, and unwilling, or, what is more likely, unable to assist him. Thus he is compelled, being pennyless, to take up his abode with his wife's relations, who are as poor as himself (save a little old furniture, of which he has the use); and here he thoughtlessly spends, year after year, his scanty earnings, without attempting to purchase the few little necessaries to furnish a cottage for himself with, merely because he is not in the immediate want of them, until his increasing family absorbs the whole. His wife's relations quarrel with him, or can no longer accommodate him; he applies to the overseer for a house or employment; is insulted and exposed before his neighbors; and soon, very soon, the same individual who would, in all probability, under more favorable circumstances, have become a useful member of society, now gradually becomes a careless, reckless, confirmed pauper; is pronounced "incorrigible" by the magistrates and parish officers; while he does not lack offensive epithets, nor the disposition to bestow them, upon those whom he only considers as enemies and oppressors. This melancholy, and, I fear, too true, picture, clearly shows how necessary, how essential, to the future happiness and well doing in life it is, for a man to commence his matrimonial life with possessing himself of a decently furnished

Cottage and Garden.—With a cottage of at least two rooms; with a dairy, pantry and a coal or wood house; and a garden of not less than twenty rods of ground adjoining; and with a clean industrious helpmate in his wife, a laboring man is a person of some consequence. He fills a station which, though humble, is yet important; because, from the moral or immoral conduct of him, and the class to which he belongs, much good or evil will ensue to society. He becomes, as it were, the first link of an ascending or descending chain of causes, which lead to moral rectitude or moral turpitude; for his actions will not only have a baneful or beneficial influence on his own immediate offspring ("as is the father so is the son"), but through them, on society at large: and, if this view of the case were generally taken by the wealthy portion of the community, I think it would induce them to assist their humble neighbors, not only with their purses in cases of emergency, but with their advice and countenance, when both may be required, as in the case of an improvident marriage. If distress and difficulties are allowed to accumulate around an individual so unfortunately circumstanced, it is idle to suppose that such a poor, deserted, despised creature, whose character none respects, will long continue to respect himself. Profligacy and dissipation ensue: his home becomes wretched; and, with a wretched home, a man has no motive to be industrious, save merely to obtain the means of dragging out his existence. Without a character, he has no motive to be honest but the fear of the tread-mill: therefore, a man to be both honest and industrious, must have motives sufficiently influential to counterbalance any propensity to be otherwise; and *these motives will always be found in a comfortable clean home.* For it ought always to be kept in view by the rich, that a poor man's self-respect, his desire to improve his condition, to provide for and rear his family in a decent and creditable manner, all proceed from this simple fact, that he has *a comfortable home, a home which he loves.*

Let us, then, suppose a new-married couple in possession of a decently furnished cottage: the first resolution they will, or ought, to come to, will be to live, within their income; and for that purpose, will consider how they can limit or entirely get rid of the baker's, butcher's and grocer's bills. The following, I trust, may be of some assistance to them in so doing:

Making Bread and brewing Beer.—A sack of flour, a flitch of bacon, and a barrel of beer, are as agreeable articles, in the shape of household stuff, as any poor man can wish to contemplate; nor would any laboring man ever be without them, if I could induce him to adopt the system I propose. With regard to the first, let a sack of wheat be purchased at the market, or at the market-price from a farmer. After grinding it at the nearest mill, let but the very coarse bran be taken out of the flour: it will, when made into bread, be fine enough for any healthy person; and be more nutritious than the compound of flour, potatoes, alum, and burnt bones, which otherwise he will have to purchase of the baker, at an exorbitant price; and as to the making up, why, every woman ought to be able to make bread; indeed, the process is so simple and generally known, that it would be useless to state the particulars, unless it to be observe, that after the *dough* has been well kneaded, and *risen* with the yest, in afterwards making it up into loaves or cakes, the less it is worked with the hands the better, as if kneaded much the bread will always be heavy. Another advantage attends the poor man who purchases his own wheat. There is the bran, every now and then, for the hog-tubs; and, as for yest, I will soon show him how he may obtain a regular supply the year round, and some to sell besides, with very little trouble or expense, when I speak of brewing.

No man can be said to be very poor who has got a good flitch of bacon or two hung up in his house: it is a great promoter of happiness, and makes a man independent of the butcher; he can at any time have a good supper or dinner, without sending his wife, or running himself, to the market or butcher's shop, to get a bit of meat at an extravagant price, more than a quarter of which will be wasted in dressing. How this bacon may be procured I will afterwards show.

In brewing, as in baking, the wife must likewise be the operator, for one is as easy to do as the other: indeed, it is as easy to brew as to make tea; and, unfortunately, most women are too dexterous at making the latter; nor does it require any very large vessels for either brewing or preserving beer. A pot or boiler that will hold four gallons; with two or three tubs, say a small square washing tub, and a bucket or two, and if a small cask cannot be got, two or three large jars, to preserve the beer in, are all that need be required in the shape of utensils.

Surely no malster would refuse to let a poor man have a peck of malt, and two ounces of hops. With these his wife may go to work, and boil rather more

than three gallons of water; as soon as it boils, take it off, and let it stand till she can see her face in it; then (having previously put the peck of malt into a tub, say a washing tub, with a small hole bored in the side, level with the bottom, and covered inside with a few small birch twigs and a piece of coarse canvass, while the outside is stopped with a wooden peg,) then, I say pour the hot water upon the malt, stir it well for a few minutes to mix it, cover it over with a sack or cloth, and set it by the fireside to keep it warm, for three hours, after which, pull out the peg, and drain the whole into a bucket. Immediately after, put in the peg, and pour in upon the wet grains as much water as before, quite as hot, or a little hotter than the first; then cover it over, and set it by the fire, as before, for two hours. This finishes the mashing. The moment the boiler is emptied the second time, put into it the first run [the first quantity run out,] boil it a quarter of an hour: add the two ounces of hops, and continue the boiling half an hour longer. Then strain the contents through a fine sieve (to keep back the hops,) into as shallow vessels as can be procured, to cool the wort as quickly as possible. Boil the second run half an hour with the same hops as before, and cool the wort in the same manner. Mix them, and there will be above five gallons, which, when mixed in the washing-tub with a small teacupful of yest, will ferment for two or three days. It should, during this time, be frequently skimmed; for this is *yest* as well as the sediment. When this fermentation ceases, the beer may be put into jars, where it will probably ferment, but slightly, for two or three days longer, after which it is fit for drinking. A good cask would, of course, be better than jars; and better, also, would be the beer, if brewed in larger quantities, then that alone would ever be an insurmountable obstacle to the poor man; and my object is to show that beer, and good beer, may be brewed with common domestic utensils, with great facility, and without at all injuring them; for, surely, a washing tub is not a straw worse for having a hole bored into it, a small cork will effectually repair it in half a minute.

This then, is the beverage which most assuredly ought to supplant the pernicious and expensive use of tea. Beer is always ready; it is wholesome, it is hearty, and it is cheap; it does not require the ceremony of boiling the tea-kettle, nor the parading of teacups twice or thrice a day; it does not require the adjuncts of sugar and milk to make it palatable; it does not exhilarate to produce palsied debility, but while it exhilarates, it nourishes and strengthens. It does not require more than a quarter of a man's earnings to purchase it, as is the case with tea, whereby he is deprived of some of the real necessaries of life; but a tenth portion of his earnings is sufficient to supply him luxuriously with this good and truly English fare. Look at the comparative cost of tea and beer for one week. No woman, if the money can be got by hook or crook, will use less than 3 oz. a week, at 3*d.* an ounce, equal to 1*s.* 3*d.*; 1 lb. of sugar at 8*d.*; milk 7*d.*; amounting to 2*s.* 6*d.*, without reckoning any thing for butter, fuel, loss of time in boiling the kettle, and in gossiping, or for breakage; while, on the other hand, a peck of malt and 2 oz. of hops cannot amount to more than 2*s.* This malt and hops will produce upwards of five gallons of good beer affording three pints a day for a fortnight: and this, too, without any extra-expense; for nothing can be fairly charged against the beer for fuel, &c., for the grains and yest cover all expenses; the yest will keep and will always be ready for baking. Thus, in addition to all the benefits attending baking and brewing at home, there is this important advantage, in having a quantity of bran and grains occasionally to add to the daily accumulating mixture of cabbages, greens, carrots, turnips, greasy wash, &c. &c., in the hog-tubs, to make a provision for a pig. I say *hog-tubs*; for be it remembered that one tub is not enough even for one pig; and, however contrary it may be to general opinion or common practice, it will be found (and it is a thing worth knowing) that a pig will fatten sooner on stale food than on fresh: why I do not know, unless it is owing to the more uniform quality of the food; for, although a pig is a gross, and certainly an accommodating, feeder, nevertheless he prefers a regular or a gradually improving diet to one of a fluctuating nature, and great inequality must inevitably attend the daily mixture of fresh food. For this reason, two tubs should be placed, side by side, one always being filled while the other is being emptied; and a portion of this stale wash daily mixed with a few potatoes that have been boiled, bruised, and put away dry in a box or basket, will make good food for a growing pig during the summer season; though, of course, more substantial food will be required before the animal can be properly fattened.

Sty and Cesspools.—If a sty has not already been erected near his cottage, no industrious man will rest an hour until he has constructed one; which may easily be done, when no better materials can be got, with a few posts, well wattled and thatched with heath or furze. For paving a sty, large flat stones are better than bricks; and where the pig has to lie, the ground should be kept high and dry. A channel on the lower side should likewise be made, to take the washings of the pig and rain into two cisterns or cesspools, which should be sunk, side by side, close to the sty, so as to catch every particle of manure, liquid as well as otherwise; and though this simple provision may at first appear trifling, it will soon be found of great importance to the garden; for it is chiefly on his pig that he must depend for a supply of manure, without which his garden will soon become unproductive. Let any person try the experiment of watering with liquid manure but for one season, and he will soon find out the truth of the observation, if he diligently water his cabbage bed, by alternately emptying the cesspools. I say *alternately*, for, even in this case, the liquid manure is improved by time; though, whether this improvement is the effect of an imperceptible fermentation, by which the greater portion, by further decomposition, is more readily absorbed by the root, or whether this property is superinduced through the stagnancy and partial exposure to heat, by which myriads of animalcules are generated, and which may possibly operate ultimately as an animal manure, I do not know. But such is the fact: and, if any person wishes to have a few early cabbages, let him apply liquid manure in abundance, and he will seldom fail of having a dish of cabbages a month before the usual time, if the plants are managed as will hereinafter be directed.

Having got his sty in order, let him look round among the neighboring farmers, and try if he can purchase a young spayed sow, that has had but a litter or two of pigs. Such an animal will grow faster, and fatten quicker, than a young pig however good the

breed. At last, having got such an animal fairly lodged under the roof of his stye, it will daily become of more importance in his eyes; it is his live stock; is constantly increasing in size and value; and, in fact, is continually uppermost in the poor man's mind. If he observes but a few dry leaves blown into a ditch, he *bags* them, and brings them home for bedding; or he picks up a bundle of fern by the road-side; in short any thing which he can honestly lay his hands on will always be brought home, and he will never grudge any trouble of this kind. Besides, all this helps to make manure: and no manure is so rich as that which is taken from the pigsty. This animal is now, however to be well supplied with food, and fattened against Christmas. The hog-tubs will now be had in requisition; and their great value will be properly appreciated, for there will be no necessity of messing every time the pig wants a meal: with a portion of stale wash, and a few mashed potatoes, the pig will grow and do well till the end of September or beginning of October (potato digging time.) At this season, a sack of barley meal should be purchased; and about three or four pounds of this meal, with thirteen pounds of mashed potatoes, which, I will show may be set apart for that purpose, when I speak of the produce of the garden, being daily added to thicken the stale wash, will make excellent food; and, if the pig, has been well attended to during the summer, should not fall short of weighing fifteen score pounds by Christmas, to which time the food is calculated to last.

(To be Continued.)

[For the New-York Farmer.]

ART. CXXX.—*Friendship between Pigeons and Martins.*

During a late excursion to Long Island, I was much amused by the social conduct of tame pigeons and domesticated martins towards each other. Different as they are in ornithological character, they associated in the same box as completely as if they had been individuals of the same species. They frequent the same cells by night and by day in the most intimate manner, and they breed and rear their young in the same little chambers. It is remarkable, that one day a strange pigeon visited the place, and was received civilly enough by his congeners; but the new comer was assailed by the martins with so much violence and perseverance, that, being deprived of all peace and rest, he at last flew away and returned no more.

June 28, 1830. S. L. M.

[For the New-York Farmer.]

ART. CXXXI.—*An American Medicinal Leech.* By S. L. MITCHILL, M. D.

It has been said, and I believe truly, that the *Hirudo medicinalis*, or medicinal leech of naturalists, is not a native of America, or at least has never been found in any of our confederated States. It has therefore become a regular branch of business to import them for immediate use, from different parts of Europe. In the New-York Gazettes, advertisements for the sale of such animals are frequent.

For several years I had meditated to procure some of these foreign leeches, and to put them into one of our fresh water ponds for multiplication. Partly however from neglect, and partly from other employment, the project was never carried into execution.

It appears now that the omission was a matter of little or no consequence. Leeches have been discovered in several ponds upon Long Island and the continent, that are excellent bleeders in the practice of physic. Some have supposed them to be Horse Leeches, or individuals of the species *H. Sanguisaga.* Be that as it may, Physicians and patients in that region agree in ascribing to them blood sucking qualities superior to those which have been imported.—they bite readily, fill their large bodies with blood, and leave a wound from which blood flows, after they have ceased to draw. Hence they are particularly extolled for this local evacuation.

Let the question of the species be determined as it may, either that the present is the horse-leech, or that it is an American variety, or lastly, that it is a new species, it is very comfortable to know, that its medicinal powers have been sufficiently tested.

Like other leeches, these have the power of great dilation and contraction. From the length of a span, they can shorten themselves to an inch. The back is of an olive green colour, the belly of a pale orange yellow. When at rest, the figure, as usual with the genus, is rather flatish, when in motion somewhat cylindrical, is rather conical. The margin at the sides is ciliated; and the yellow is distinguishable above this line, encroaching a little upon the green. Along the middle of the back, longitudinally, is a row of about twenty spots, nearly the colour of the belly.—On each side, close to the ciliated margin, is a row of about as many spots, which are almost black. The yellowish spots run through or are encircled by a nebulous discoloration of a different hue both from the green back and the black spots. Between this dusky sort of stripe, and the rows of black spots, there are rows of dusky clouds. These latter are oblong; whereas the spots are round or circular. The belly is also variegated irregularly with black dots. On the belly also, three pale reddish blotches are observable.

Though we introduce from distant countries, many things which our own produces or can produce; yet it is agreeable to know that we can procure an article at home, although in the course of trade and commerce, we persist in deriving it from abroad.

I hope the specimens I have collected, will enable the zoological question to be finally settled at an early day.

Plandome, L. I. June 28 1830.

ART. CXXXII.—*Abridged Translations from the Annals of the Horticultural Society of Paris.* By the EDITOR.

NUMBERS FOR OCTOBER AND NOVEMBER.

Culture of the Celery Radish (Celeri-rave.) This is cultivated with success and abundance throughout oriental Germany, and in the east part of France.—The writer expresses astonishment that this celery is not cultivated in the vicinity of Paris, since it is so very savoury, sweet, and lightly aromatic. He considers it worthy to figure among the dainties of the richest tables. It is most excellent in gravy for meats,

and when cut up and fried. On the approach of winter they are pulled, the tops taken off, and preserved as are carrots.

Preparation of Seeds for Sowing.—From numerous experiments it is ascertained that seeds of almost every kind, obtain, by the use of chlorine, an astonishing developement, a quicker maturity, and give a *triple and quadruple* produce.

During twelve hours the grain is soaked in rain or river water, and then add fourteen or fifteen drops of oxy-muriatic acid, (hydro-chlorine-acid) to each pint, (litre, livre? or litron?) The grain is well stirred and after six hours of a new soaking in the sun under the cover of glass or oiled paper, it is taken out and strained through linen. After the seed is sown, the water in which it is soaked is poured on the planted ground. After the plants are up they should occasionally be irrigated with water acidified in the above proportions.

Coloring matter of the Sophora Japonica.—In the November number of the 'Annals' is a report on the method of obtaining the coloring matter of this plant, and on the importance of its introduction and culture in France. The fruit is soaked in water until the seeds can be easily detached from the pulp, and also the pellicle adhering to them. The pulp is then mashed and filtered. The liquid is left to settle, when, by a second filtration, a gummy substance is obtained, in which is found the coloring matter.

The material for coloring is soaked in water saturated with the muriate of tin, or mixed with cream of tartar. If the color is designed to be varied, to green for instance, a little sulphate of tin is added. The colors thus produced, are bright and brilliant.

This coloring substance possesses an advantage over most others, in being preserved in a dry state, for many years, without loosing its coloring properties.

The tree is superb for decoration, grows rapidly in all climates. Its sombre foliage forms a beautiful contrast with other trees. It is very easily multiplied from seeds, attaining the first year a height of two feet, and twelve the second, if they are transplanted into a light fresh soil, and properly pruned.

Another way of multiplying it, is to dig up a stock and collect all the roots cut off by the operation.—These roots are grafted by slit (en fente) on proper proportioned branches, which are again inserted in the ground. These grafts give shoots of five or six feet the same year.

The wood of the Sophora is very slow in arriving to perfection, but when it has attained its full maturity it is excellent for the carpenter and cabinet maker.

The writer, the abbey Berlese, reccommends to the proprietors of extensive domains to make large plantations of the trees.

Durability of the fecundating quality of the Pollen. M. Lemon says he has preserved for sixteen days the pollen of the pæony of Liberia, in paper, in a dry place, and then fecundated a pæony of China with full success.

On the duration of the germinative faculty of the seeds of plants, especially the cucurbitaceous.—In the annals for September, and in the fourth number of the annals of Fromont, is an extract from the memoirs of the society for the improvement of horticulture in the Prussian monarchy, Vol. iv.—Of this we present a translation, on account of the curious and useful matter it contains. It was drawn up by M. Davau.

From time to time, the society for the encouragement of horticulture in Prussia, proposes certain questions, upon which it invites the attention of cultivators. These small problems are excellent means, on one side, to trace a way to practical men and to beget in them an idea of easy researches, on which they had not exercised a thought; and on the other, to collect a great number of observations and experiments on obscure and controverted points of the horticultural art.

One of the questions proposed by the society is the following: "Is it true that the seeds of the melon and cucumber kept for several years, afford a greater abundance of fruit?" The greater part of the observers attest that the plants obtained from the seeds of the preceding year produce a great proportion of females, but few fruitful flowers, and almost uniformly an abundance of leaves; but that this same kind of seed dried by the heat of man or of the sun, or of a shovel furnish more fruitful plants, and it is particularly at the end of several years that they acquire this property Here experience carries from three to twenty years. The heat of the human body may be useful; but it must be cautiously used, lest the seeds should lose their germinative faculty.

The author of the tract has made experiments of the same kind on Balsimines and Gilliflowers. He sowed together seeds of the latter, some of which were of the preceding year and the others several years old. The former came up much sooner than the latter, and yielded only single flowers, while the others gave but sixteen suchon several hundred stems.

M. Schmidt employs seeds from five to twelve years old. Those of twenty years did not grow. Professor Sprengel of Halle says he has obtained no fruit from yearling seeds. M. Aresterff of Drebkan has procured from seeds twenty years old, fruits remarkable for their savour and size. The observations of Professor Traviranus of Berlin have afforded him the same result. A vigorous vegetation produces in declinous plants male flowers in greater abundance, sometimes even exclusively. He has stated this for the cucurbitaceæ; but seeds too old produce an opposite result. He has seen seeds of five years produce only female flowers, which on being fecundated by male flowers of another planting, produced fruit.

M. Voss gardener in chief at Sans souci, planted on the 7th February, 1827, 24 Spanish melon seeds of 1790, being consequently thirty-seven years old; whence he obtained eight plants that afforded good fruit. This experiment the most remarkable of the whole, inclines us to quote eleven others made by him with seeds not so old, and proceeding from different species. Cucumber seeds, seventeen years old, afforded the like results. M. Voos adds that the seeds of the *Alcea rosea*, twenty three years old, produced for him well conditioned plants.

We admit as incontestible, the observations we have just stated. It is known that the seeds of different families preserve for a greater or less length of time, their germinative faculty; a single example may be cited from the *Leguminosæ*. It is, if our memory does not deceive us, about twenty years since we caused to germinate in the king's garden, the seeds of a species of *Phaseolus* or *Dolichos*, taken from the herbarium of Tournefort. Perhaps a great number

of experiments have not yet been made on the seeds of the Cucurbitaceæ. However that may be, the greater part of those we have cited, are contradictory. It is, of course, impossible to deduce from them positive principles.

On the planting of almonds separated from their kernels—By the same.—Another question proposed by the same society is this: "Have good plants been procured from the planting of almonds, detached from their kernels?"

M. Bosse of Oldenburg says this method is the most sure, and accelerates the germination. The horticultural society of Guben has obtained two opposite results from peach trees and apricot trees.

M. Feye of Lignitz has made the following observations: To draw the almonds from their kernels, the pulp must be immediately removed. The nuts must then be placed on their broadest side, and subjected to the action of a moderate press. The kernels will open easily, and the almonds remain untouched. They are next to be placed, without pressure, one near the other, in a dry situation, exposed neither to the wind nor the sun. Before planting them, they are to be put, for several days, in a moist moss. The plants so obtained are more delicate than those which come from almonds that have not been uncased, and cannot sustain a very hot sun.

Here follow the proceedings of M. Eichstaedt, gardener, near Sprattau. After having removed the pulpy part of the almond, he exposes them to the sun and more especially to the air, until the ensuing spring. Their contexture is then so much changed, that planted in March, in a soil somewhat moist, the almonds sprout in June. He has likewise tried the muriatic acid, indicated by Mr. Otto, in conjunction with the following circumstances: he placed the kernels in a close vessel, poured on them the muriatic acid, and left them for forty eight hours. He then put them in a bed, bepowdered with fine charcoal, then he covered them with the same substance, and two inches of earth. All his almonds grew. Charcoal dust preserves them from the attacks of mice.

ART. CXXXIII.—*Abridged Translations from the 'Annales de l'Institute de Fromont.'* By the EDITOR. [Continued from page 137.]

NUMBERS FROM AUGUST TO DECEMBER.

We have looked over the above numbers of this work, and although we do not find much, which we think it advisable to transfer to our columns at present, yet there is abundant evidence that the institution is rapidly gaining the confidence and countenance of the French public. In addition to provisions made by associate bodies for the support of students, his majesty Charles the X, the Dauphin, Dauphiness, and others of the king's family, visited Fromont, and were so highly pleased, that he not only made a donation to be distributed among the gardeners, but added *royal* to the title of the Institute. In consequence of the patronage thus obtained, the chevalier Soulange Bodin has enlarged the course of studies, and taken other measures to increase the usefulness of the institution.

These numbers of the Annals are almost entirely taken up with lectures on a course of botany, and on horticulture. The latter, well worthy of a translation, which we may give at some future day, contain much practical information, very suitable for a primary course for young gardeners.

(To be Continued.)

ART. CXXXIV.—*Vegetable Remains of the Valley of the Lackawanna and of Wyoming.—Origin of Coal.*

In visiting several of the mines of the Susquehanna and Lackawanna, the naturalist is gratified, by seeing the vast deposits of vegetable impressions and remains which accompany the coal, usually in the slate that forms the roof, and occasionally in that of the floor; they exist also, although in a smaller degree in the sandstone, and sometimes, but much more rarely even in the coal itself. There are instances where they fill the slate for a space of ten feet in thickness, and making due allowance for the compression which they have undergone, the original deposits, must have occupied a vastly greater thickness, than their relics do now. The impressions are very perfect, indicating repose and calm, at the time of their deposition, and excluding the possibility of transport from distant countries; there are many species of ferns, none of them, as is said, modern, and most or all tropical; there are impressions, sometimes several feet long and broad, of the bark of gigantic vegetables; some botanists say they are palms; occasionally there are entire limbs, carbonized; frequently, broad leaves are found of six or seven inches or more in diameter; culmiferous plants are numerous, and so are the aquatic algæ, and rushes; the leaves of the plants are usually in full expansion, the most delicate parts of their structure being exactly preserved, or copied; and according to Mr. Cist, flowers of a stellated form, are occasionally found. Prof. Hitchcock, believed that he had found a flower with unfolded petals, and so it appeared to me.

The inferences to be drawn from the vegetable remains are very interesting, but there is not time to discuss them fully on the present occasion, or to apply the facts to account for the origin of coal; a subject sufficiently difficult. We cannot however hesitate to say, that vegetable life on a great scale, attended the formation of this coal, and both preceded, accompanied, and followed that event; that the causes which established its existence were repeated many times, and continued to operate, during the deposition of the successive strata; that a sedimentary rock, namely the slate, in a loose and impressive form, was deposited with the vegetables, and enveloped, covered and preserved them; that a fragmentary rock succeeded composed of pebbles, rounded or angular, or of sand cemented firmly—the ruins of previously existing formations; that the causes which produced these rocks were also many times repeated, and of course, that all the causes which produced such deposits as the various ones now mentioned, were at different times, alternate, successive, and concomitant.

Is the anthracite coal of vegetable origin? Does the fibrous charcoal, frequently found between its layers, owe its origin to the vegetable skeleton? There seems no more reason to doubt the latter fact, than that the vegetable impressions, found in and upon

the coal and its rocks, have the same origin. But did the mass of coal arise from vegetables? This has been admitted by many persons with respect to bituminous coal, but, I have, heretofore been inclined to attribute anthracite coal to a direct mineral creation; the opinion of its vegetable origin appears however to me less improbable, since I have seen, with my own eyes, the incontrovertible and abundant proofs of vegetable life in these mines. We are obliged, from the facts here seen, to go a great extent, in admitting vegetation in connexion with this coal. But if we seek to trace the entire masses to vegetable matter, how shall we admit the existence and accumulation of the enormous quantities that must have grown or been collected on the spot, to form such stupendous beds, ten, twenty, and thirty feet in thickness, and repeated, again and again, with all their attendant rocks and impressions. But, the plants, from ferns and lilliputian vegetables to those of great size did grow, and were deposited, in connexion with these coal strata; for, there we find their unquestionable and exuberant remains; and they were produced again and again; for we find them in the different deposits, as the coal strata succeed each other at different depths. As the vegetables whose organized forms or impressions we actually find, did exist in these places, could there by any possibility, have been enough accumulated to form the coal beds? If it is difficult to answer in the affirmative, perhaps it is not quite certain that we must reply in the negative; at least it is not, I must confess, quite so certain, as I once thought it to be.

But, supposing the vegetable matter to have existed in sufficient quantity to have formed the coal; why, if so formed, is there in general, no appearance of ligneous structure, of vegetable organization in the coal itself? On this point it may be suggested, that the vegetable matter may have been so decomposed, as to lose, in a great degree, its organization; it may have been suspended or deposited in water along with the same earthy matter, which formed the accompanying rocks, and particularly the coal slate, and this earthy matter may have been deposited along with and among the particles as well as the masses of coal; now in minute proportion, as we actually find it in burning even the purest anthracite, the form and structure of whose layers, is delicately exhibited by the earthy skeleton, commonly called ashes, which remains; now the earthy matter may have prevailed to a greater degree and then the coal is more impure, less combustible, and affords a more abundant residuum; again the earthy matter may have prevailed still more, and then the deposit is a carbonaceous slate—and lastly, the carbon may have been supplanted by the earthy matter, and then seams of slate would be formed as we actually find them in the coal beds. Without some such process, it seems difficult to account for the varying proportions of earth and carbon, which we find blended in the anthracites; the extremes being the purest coal on the one hand, and slate on the other, and between these there appear to be innumerable mixtures or combinations of earth and coal in different proportions.

Perhaps the reason why the vegetables found in the slate retain their organized form, is found in the fact, that the fine sedimentary earths, the silicious and argillaceous, of which the slate is composed, may have enveloped plants too suddenly, to permit them to undergo decomposition, and thus to exhibit an impalpable carbon; while their forms would, of course, be distinctly impressed upon the yielding plastic matter of the slate, rendered soft perhaps by diffusion in water. Pressure is also to be taken into account in reasoning upon the probable obliteration of the organic structure: this force would operate in proportion to the progress of the accumulation whether of coal strata, or of those of superincumbent rock.

Many other considerations present themselves in relation to this subject; such as the time when, and in which, these deposits were made, the original position of the strata whether flat or inclined; if flat by what force raised or depressed; if inclined, how the materials were prevented from accumulation in thicker masses at the lowest curvature or point of declination, &c. Internal fire may have raised and distorted and modified the coal beds, after they were formed, but it seems more difficult to admit, that coal strata have been in actual ignition.

But, dismissing theoretical considerations, the coal is in our power and it is destined to produce great results in the United States. Including the bituminous and the anthracite coal of the various regions, there is in our territories, enough to supply the world, and the country on the Susquehanna and its tributaries will, when the communications shall be duly opened, rise to a degree of importance, at present, not easily realised. It is hoped that the spirit of speculation, so productive of extravagant and erroneous expectations, will not be here substituted for a regular course of industrious exertion, which, with suitable enterprize, forms the best basis of public and private prosperity.—*Amer. Jour. of Science.*

ART. CXXXV.—*Miscellaneous Selections from Foreign Publications.*

Profits of Farming.—Improvement, nevertheless, in all its branches, must be followed up with strict attention to economy; but unless a man has a fortune at his back sufficient to bear him through, (when he may be at liberty to please himself,) let him not be led into whimsical or extravagant expenses: neither should the young man of fortune, on coming to his property, if his mind should turn to agricultural pursuits, deceive himself by visionary profits, prematurely estimated or anticipated, and which are not to be realized. It is not the wish of the writer, to damp the sanguine expectations of such young men, but there are sedate and reflecting minds, even among such, who will profit as they go along by experience, and take caution from the mistakes of their neighbours; rural pursuits will also become agreeable to such, and a strong inducement to reside in the country, and at the same time afford employment and a livelihood to those about them. Besides, to such persons, there is a constant variety—in looking after the trees, shrubs, fruits, crops, &c. which they plant, and see grow and thrive under their care; and which are presenting themselves always under some renewed form, rendering agriculture, planting, and gardening, the most agreeable and least tiresome of human pursuits.—*Eng. Pub.*

Ploughing.—Make it a fixed rule never to plough your land in wet weather, and the observant farmer will, no doubt, have often remarked, in the same field, the difference in the crop on a spot ploughed in bad weather, and that ploughed when the soil and weather

were dry. It is only on dry, sandy, or light land, that ploughing ought to be carried on in moist weather. *Ibid.*

Shifting Stock on Grazing Grounds.—Suppose you put 20 cows into a reserved field of 12 acres on the 1st of June; if the land is prime, it will answer them until near the 1st of July, but a quantity of long refuse grass will probably remain; on this it is that I propose turning in for the first week, after the removal of your fattening stock, at least 40 bullocks, to remain till they eat down the grass only; if in a week, so much the better; drive off the stores then, say by the 8th of July, and the enclosure must be preserved until the end of August, when you will have another round of clean fresh grass for your fat stock. There is no waste by following this method, and it will be found highly beneficial to the stock, as well as the best economy. Two or three turns by good management will be had out of each field during the summer and autumn. To those extensive in the dairy line, I would advise the same practice. Good enclosures for this, as well as many other reasons, will enhance the value of a farm much. The closer and more evenly your pastures are eaten down, the kinder and better they become: and when grass grows too freely of a wet year, it will be inferior in fattening qualities to that of a dry.

No man should pretend to judge decisively of the fattening qualities of land, or its proof or staple for tillage, at once or at first sight. It is only by character; by seeing the stock it turns off, or the crops it grows, that he can decide. The grassy qualities of land are more easily discernible.—*Lambert's Treatise on Farming.*

Stall Feeding.—One of the quickest and most certain methods of fattening cattle in the stall is, by feeding with bran and linseed oil mixed, the proportion two pecks of bran a day, divided into three feeds; and half a pint of oil to each feed, mixed well for small cattle; the proportion to be incresed for large. *Ibid.*

Breeding Live Stock.—To avoid consanguinity and breeding from the same family, or what is commonly termed breeding *in-and-in*, as such will, if persevered in, prove highly injurious; you must therefore procure your males from those having a similar breed, but of different blood from your own. A skilful breeder will not use the tups bred on his own farm, although superior in shape to any he can procure; and those possessed of the best stock, both of the short and long-horned cattle, keep two or three separate lines of blood to avoid consanguinity; but as crossing with different breeds will generally disappoint when prolonged in the line, each breed in its kind should be kept distinct.—*Ibid.*

Irish Peasantry.—As regards the resources of our peasantry for the better cultivation and husbandry of this valuable product (wheat,) they are now fast coming about to that state of comparative comfort which they enjoyed previous to the great eventful æra of 1815; about a year after which period, up to the year 1824, they were probably in a more wretched state than any other in Europe: during that period their live stock and crops were not sufficient to pay the high rents laid on during the war; the standard of value, wheat, having fallen from thirty shillings per cwt. to seven or eight shillings. It was in vain, therefore, for the proprietors to expect war rents, (if I may be allowed the term,) when war prices for produce had ceased: and where abatements were not made nominally they were made virtually, either by advancing more than the current price for cattle or corn, or the tenant running into arrear, which it was in many instances, at least as honest in him to withold, as in the landlord to exact. If he could not withold, he ran away from necessity or despair; on the other hand, if he remained constant to the soil, the consequences were too often distressing; every market-town regularly witnessing the sale of the cow, or perhaps the rude cabin-furniture or last blanket of the gradually impoverished and wretched posessor. During four or five successive years also, if seed had not been supplied by the landlord, the soil would, in many instances, have remained unsown. This season of misery was rendered more full by a failure of the potato crops, caused by the excessive wet and cold of the summers of 1816 and 1817: and again, by the dreadful consequences of the failure of the potatoe crop of 1821, during the summer of 1822. It could not however, be deemed a famine as to food, it being more a *famine* in the way of money, as there was sufficient in the country to support the people. But as if it were designed as a scourge from the Almighty Disposer of all events, the summer became so dry, that not a mill in the country could work from the want of water. Nothing therefore could be done; and if it were not for the truly generous and noble exertions of the British nation, it is horrible to think what the consequences might have been. Nor should the peasant of Ireland be ever unmindful of the humane and exalted feelings of Englishmen on that calamitous occasion. *Ibid.*

Forest Trees.—Lord Newborrough, in 1828, received the large gold medal of the Society of Arts, for his success in setting out forest trees on his estates. "The whole number of trees planted by his lordship on the abovementioned estates during the last seven years, is 3,738,000; and from the remarks contained in the margin of the planter's book, the following conclusions may be drawn:—

"That exposure to the prevailing sea-winds on the western coast is highly injurious to young plantations; that if a very dry summer succeeds the autumn and spring planting, a considerable proportion of the young trees, especially of the pinus genus, will perish, althoug such dry seasons will probably be by no means injurious to trees a few years old; that although plantations will rise tolerably well on land imperfectly drained, other circumstances not being unfavourable, yet it is highly detrimental to them when exposure to the sea-wind is superadded; that plantations, in other respects favourably situated, are injured by grasses and weeds overtopping the young plants, and that many perish when this circumstance is combined with an imperfectly drained soil."

Food for Oxen and other Cattle.—Every traveller who passes Alsfelt, a little town between Frankfort and Wiemar, remarks the beauty of the oxen employed in agriculture in that neighbourhood; and yet are only fed on straw and roots, straw being the only fodder raised in that part of the country. It is prepared as follows:—

The straw is cut very small by the chaff cutter: it

is then put into a caldron, mixed with potatoes and carrots, and boiled till it forms a kind of jelly. This mixed with a sufficient quantity of water, is served in due portions to the beasts. The animals so fed require no water, and so well do they thrive on this mess, that they are, notwithstanding the summer labour, ready for the butcher at the end of the year.—*Jour. de Soc. Agro. Practiq.*

Milk.—For the accommodation of Europeans at Canton, during the business season, milk is hawked about the streets as in towns in Europe, ready meeted out in small unglazed earthen pipkins. The milk is drawn from large *breeding sows* kept for the purpose. It is sweeter than the milk of the cow, but few strangers can detect it, unless they are told what it is.

Diseases of Dogs.—Cadcleugh, in his *Travels in South America*, says, the disease called hydrophobia is unknown there, and thinks the process of worming, so common among the fanciers in towns with us, may contribute to this disease, by depriving the animal of one of the salivary ducts. This is worth inquiry by scientific men.—*Sport. Mag.*

Vaccination an Antidote to distemper..—About six years ago, I was induced, at the suggestion of a medical gentleman, to try the effect of vaccination upon three young dogs, which I placed by themselves for the purpose of giving them every chance, and where I could watch them more conveniently. To my great astonishment and delight, the three dogs took the cow-pox effectually, and never had the distemper afterwards, although I carried my experiment so far as to place them in the hospital, where nine young hounds were suffering in that disorder. I need not say that after my experiment answering so satisfactorily, I have continued ever since to vaccinate the young dogs; and though I must admit that some of them have had the distemper after vaccination, it has attacked them in a very mild degree, and they have in nearly every case recovered. In addition to the above, allow me to add, as an opinion only, that cow-pox may have the effect of rendering the constitution of a dog less susceptible of madness. The part I vaccinate is the inner part of the arm near the chest.—*Ibid.*

Flesh of young Calves.—By a municipal law in Paris, it is forbidden to expose for sale the meat of calves less than six weeks old. The great profit arising from the sale of milk furnishes an inducement to the violation of this law. Many thousands of cows are kept and fed in cellars, within the walls of Paris for the sale of milk, and unless a cow yields a calf about once a year, she is less profitable.

The prohibition of the sale of very young calves, is deemed of great importance to public health. At less than a month old, the flesh of the calf is not even gelatine, but a viscid and glutinous juice, containing very little fibrine, (which is an animal substance essentially nutritious) still less ozmazome, a principle exciting to the digestive organs. Hence there are few stomachs capable of supporting such food; and were it digestible, it would strengthen and nourish the body very badly. More frequently it resists the digestive powers, becomes a foreign and inert substance, which excites the secretion of no fluid, traverses rapidly the intestinal canal, and thus creates obstinate diarrhæas, frequently accompanied with cholic. If such is the effect of one or two meals of this kind of aliment, what must be the result of a habitual use of it? To what extent does not the public health suffer by such an injurious diet?—*Annales d' Hygiene publique.*

Analyses of Pollen, by Macaire-Prinsep.—The only dust of the stamina of plants which has been subjected to analysis, is that of the date tree *(Phœnix dactylifera)* brought from Egypt by Delile. Fourcroy and Vaqueline found it disagreeable to the taste, and they discovered in it malic acid, phosphates of magnesia and lime, a soluble animal matter, and a portion of insoluble animal matter, between gluten and albumen. They concluded that probably the pollen of all plants contained azote.

The pollen of the cedar having been analysed by the author by means of the oxide of copper, he obtained only 40. of carbon, 48. 3 of oxygen, and 11. 7 of hydrogen, without an atom of azote. By treating it in the cold it gave water, a reddish oily liquid, thick, strongly reddening turnsol and giving no ammoniacal odor with pure potash. It appears then certain, that the pollen of the cedar differs from that of the date, in containing no animal matter. This induced the author to examine it more minutely, and from the most careful trial it appeared to contain—Acidulous malate of Potash, Sugar, Sulphate of Potash, Silica, Gum, Yellow Resin, Phosphate of lime, and a vegetable substance constituting its greater portion, somewhat like starch, though differing in its sensible characters.

Lycopodium (perhaps the pollen of L. Lavatum) gave analogous results, although by analysis it yields 10 per cent more carbon, which explains the comparative splendor of its flame.

Carbon, - - -	50.2
Oxygen, - - -	39,2
Hydrogen, - - -	8,6

Bib, Univ. Jan. 1830.

Change of colour in the wood of certain Trees.—M. Marcet ascertained by a great number of experiments, that the wood of the alder, which, when exposed to the air, acquires a red colour, does not undergo any change of colour, if at the moment when the branch is cut transversly, it is placed in a perfect vacuum, or in a gas containing no oxygen; and on the contrary, that the red colour becomes deeper in oxygen gas than in atmospheric air. If the wood, after being cut, is plunged in water, it always reddens, though immediately introduced into a vacuum or gas containing no oxygen. Alder wood which had acquired a yellow colour, gave it out by degrees to water, and the water being evaporated, yielded a colouring matter which had all the chemical characters of pure *tannin.* Hence the discolouration of the wood is ascribed to oxygenation at the moment when it is exposed to the atmosphere. In these experiments the branch must be cut transversly, for if the bark only be taken off, the change of colour is much less decided.—*Bib. Univ. Feb.* 1830.

Art. CXXXVI.—Natural History—*Transformation of Animals.* By the Editor. [Continued from page 136.]

Although the constituents of matter are few and unchangeable in their nature and properties, yet the substances formed by their combination are constantly undergoing changes. This is true not only in the vegeta-

ble but in the animal kingdom. In every stage of existence, the bodies of animals are passing through transformations more or less apparent and striking. Wherever the principle of life exists, or in all organised substances, there is no *vis inertiæ* of matter, as it respects its permanency—All is action, an unceasing routine of cause and effect. Even the very bones of our frame are constantly, though insensibly renewing their age. So great is the change that the man of fifty has not, perhaps, a single particle of matter in his whole system, which he had at the age of twenty.

There are various kinds of changes and transformations. The appetite of man mutates, and his mental powers develope, as he advances from infancy and boyhood, to the age of thirty. The deer does not acquire his noble and beautiful horns until puberty, and even then, as large as they are, they are annually cast off and renewed. Many birds are blind when hatched, and before age has furnished them with their gay plumage and with vocal powers, they are unsightly objects. The pride of the peacock has not its beautifully variegated and brilliant colors until the third year. All birds annually moult or cast their feathers; and quadrupeds shed their hair. The frog, when first escaping from its egg, is in the form of a tadpole with a large roundish head, long tail, and without legs. In the course of the first season, the two fore feet make their appearance, and soon after the hind ones. The tail gradually wears away, and the animal becomes an active amphibious quadruped. Serpents add to their beauty and lustre by annually casting off their old skins. Lobsters, crabs, and others of the crustaceous tribe, retiring to some secreted place, cast off their shells.

Of all the classes of animated beings, insects undergo the most full and striking metamorphoses. Who will give bounds to the plastic hands of the Almighty, when he sees the butterfly adorned with four beautiful wings, furnished with a long delicate spiral proboscis as a substitute for a mouth, and with six legs, and learns that this beautiful insect is the renewed form of the disgusting hairy catterpillar, having jaws, teeth, and fourteen feet? Though the transformations are interesting, even the most minute detail, yet the various appearances of three states, the worm, catterpillar or larva, the chrysalis, and the completely formed insect, are so well known that we shall not further occupy our pages. There is much yet to learn concerning the habits and transformations of insects. The field is a wide one, and useful results to the farmer and gardener, may be looked for from the investigation of naturalists. Were we so well acquainted with insects that those which are injurious to our interests could be distinguished from those which are not, the injury to our fruit and grain might be much lessened. By being better acquainted with their habits we could render our efforts to prevent their multiplication much more effective.

(To be Continued.)

ART. CXXXVII.—*Fountains of fresh and salt water.* By Nahum Ward.

Sir—In the last number of the Journal of Science, I was pleased to observe the remarks of Mr. G. W. Long, upon the spontaneous flow of springs or water from the bowels of the earth. He says, "springs that flow spontaneously are generally found on the sides of hills, or in the neighborhood of them; and often in such situations as not to be easily accounted for, and to be, at the same time, objects of great curiosity. The flow of water from the bowels of the earth by boring, excites still more wonder, as the cause appears more hidden from our comprehension. In all these cases the hydrostatic principle which causes the discharge of the water, must be the same; that is, the pressure of a column of water superior to the pressure of the water raised; and in the absence of any other active force to cause this pressure, *it follows that it must arise from a superior fountain head.*" If this be correct on philosophical principles, can a sound reason be given, why a more copious fountain of water should be found by boring at the brow of the hills, from four to nine hundred feet deep, perpendicular, that can be found by boring the same depth one hundred and sixty rods, or three hundred rods, back from the hill on the plain? For such is the fact; *salt licks* on the surface are found all through this western country, and generally at the edge of rising ground. Some of the largest of the *licks* are at the foot of the lowest hills; salt wells were sunk at these places to a great depth and some in valleys, where strong licks were found, two hundred rods from the hills, which were not high, but without success. The wells were abandoned.

The citizens of this country have laid it down as an axiom, founded on experience of some ten or twelve years in the boring of the earth for salt water, to sink their wells at the brow of the highest hills, commencing on a rock, at the surface, if possible. No matter whether there is any appearance of licks, or of brackish water, within miles of the place. At the depth of from one hundred and seventy to eight hundred feet they obtain strong salt water, which gushes forth spontaneously, from some wells, six and ten feet above the surface, without being exhausted. In all cases the wells of the greatest depth, and at the brow of the highest hills, have discharged water with the greatest force. The hills are from sixty to two hundred feet high. When we take into consideration the depth of the wells, upon what principle of hydraulics shall we solve this problem?

There are now a great many salt wells, thirty or forty miles from this place, on the Muskingum river, near to Zanesville; and on Leading creek, in the county of Meigs, several wells have been in operation for years, and make very beautiful salt, which sells at fifty cents per bushel.—*Amer. Jour. of Science.*

Marietta, March, 1830.

ART. CXXXVIII.—*Manufacture of Silk in America.—Report to Congress.—Homergues' Essays.*

An important report on this subject was made in the Congress of the United States, March 12, 1830. It appears;

1. That American silk is superior to any other; and that eight pounds of American cocoons will produce one of raw silk, while twelve pounds of Italian or French cocoons are necessary for the same purpose.

2. That although silk has long been manufactured in some parts of the United States, and particularly in

Connecticut, it has not been done in the most profitble manner; for the sewing silk of Connecticut is made from the best silk, while that of France and Italy is made from the refuse silk, and still is of a superior quality.

3. That the proper reeling of the silk is indispensable to its being duly manufactured into the finer fabrics.

4. That the climate of the United States is in every part of the country adapted to the culture of silk, as the hatching of the eggs is accelerated or retarded by the variations of temperature, so as to suit the putting forth of the leaves of the mulberry, which is easily cultivated from the seed, and grows in almost every soil.

5. That the United States, in the year ending September, 1828, imported silk to the amount of $8,463,563, of which $1,274,461 were exported, and that the export of the materials for bread in the same period amounted to only $5,414,665.

6. That silk may in a few years become an important article of export from this country; for even France, although she raises much silk, annually imports to the amount of $20,000,000.

The report of the committee is sustained by an interesting letter from Peter S. Du Ponceau, Esq., a gentleman equally eminent for his talents and learning, for his private excellence and for his patriotic views towards this, his long since adopted country.

Mr. Du Ponceau strongly recommends the establishment of a course of instruction in the filature or reeling of the silk; and to this end he proposes that the government should afford the necessary patronage to a young man, who is represented as every way qualified for the undertaking—namely, M. D'Homergue, who has already appeared advantageously before the public in his essays on the culture of silk, in which he has been aided by Mr. Du Ponceau. These essays are highly interesting and instructive; and granting that the facts are as stated, (of which we cannot entertain a doubt,) they establish a very strong case in favor of the culture of silk in the United States. It is proposed that the course of instruction shall be given at Philadelphia. It will require two years from July 1 to Nov. 30; and sixty young men can be instructed, and may begin on the first of July, 1830.

In the mean time it is proposed to instruct twenty women, who shall be able to exhibit the filature in actual operation, when the young men shall assemble in the following year.

As there can be no filature without cocoons, it is proposed that Mr. Homergue should travel variously in the United States to obtain them, and to promote as much as possible the culture of the mulberry tree and the raising of silk worms.

It is proposed to encourage by suitable bounties the planting of the white Italian mulberry tree, as silk worms and cocoons will naturally follow where this is done.

To this important and patriotic effort we wish all possible success; and it cannot be in better hands than those of the gentlemen who have undertaken to promote it in the United States.

Dr. Pascalis has made great efforts and sacrifices on this subject. Mr. Duponceau is giving the weight of his character to the same object, and it is fortunate for this country that eminent natives of France, so long distinguished for the manufacture of silk, are bringing their knowledge and early partialities to bear on this subject, which is evidently of the greatest national importance.—*Silliman's Journal.*

The following was addressed to a farmer of Penn., who brought a bottle of the oil to Maryland—at a large dinner party on Elkridge, of gentlemen from town and country, of whom we had the pleasure to be one; the salad was dressed with this sunflower oil. It was eaten, and pronounced to be excellently well dressed, no body suspecting it not be olive oil. When the British treaty was made, *cotton* was deemed to be an exotic product, unworthy of regard.—*Amer. Farmer.*

ART. CXXXIX.—*The Sun Flower—its culture—product—properties, uses and value.*

The sun flower is cultivated like Indian corn, planted in rows; the rows three feet apart and stalks eighteen inches.

Any land which produces corn will yield from 50 to 70 bushels per acre, and it is worth 75 cents a bushel.

The single headed kind is preferable, and as soon as ripe, which is known by its shattering—the heads are taken off, carted to the barn floor, and immediately threshed out with the flail, it should be cleaned with the wind mill, (or fan we suppose,) and then spread out, and occasionally turned or stirred to become dry, if left upon a large heap it may mould.

By an improved mode of extracting the oil, a bushel of seed yields a gallon of oil—three quarts cold pressed, and one quart by heating. The cake when ground is very nutritive as cattle feed, and will pay the expense of the miller.

The oil used as a purgative appears to have the same effect as castor oil, without the nausea.

Of the bottles sent, one marked with a yellow ribbon, was expressed about two months ago—the three other bottles were expressed four weeks since. The first is clearer, owing to the difference of the four weeks; it clarifies without any preparation. The three bottles are finer in their taste than that marked, which is owing to an improvement in the machinery for making it.

A bushel of seed will plant about ten acres. I can furnish any gentlemen disposed to cultivate it with the best seed. I expect to raise about 500 bushels this season, and have engaged others in raising probably as much more. CHAS. A. BARNITZ.

Mr. EDITOR, The following was communicated to the Troy Sentinel. By inserting it in the New-York Farmer, you will oblige your friend, A. W.

Lansingburgh, May 10, 1830.

ART. CXL.—*Grafting the Vine.*

The successful engrafting of the grape vine, which has so long baffled the skill of nurserymen, in this country, and of the Vignerons in Europe so as to make the operation as sure and as easy, as in the well known, operation of engrafting on trees, was, so far as I know first made known to the American public, by my late worthy friend, J. J. Dufour, of the Vevay Swiss Vineyard, Indiana. In his very excellent *practical* treatise, "The American Vine Dresser's Guide," 12mo.

pp. 317, Cincinnati, 1826, the result of twenty-five years' experionce in the grape culture in the United States, at page 225, he fully describes this mode. The author of this work died at Vevay, in February 1827, some years previous to which he had instructed me in his mode of engrafting, and which I have found, by experience to be perfectly successful. As the author made no secret of it, so I have not, but have told every body that applied, taking care to inform them who informed me. Dufour is dead; every body, about here, now practices upon his plan; but no one so far as I can discover, remembers the man, and many are claiming it as a sort of mystery of their own! His plan is, to saw off the root of the stock, into which you would insert the graft, under-ground; bore a small hole into the end of the root-stock, and insert the graft, with one or two buds, then keeping the root covered with mellow earth, and the upper bud just even with the surface, and the whole process is accomplished. I never water my grafts, and I have had them grow 15 feet, the main vine, the first year, besides bearing ten to thirty bunches of grapes. Some care is necessary, in rubbing off the superfluous shoots, but the operation is easy, and as sure as the inserting of a graft into an apple or plum-tree. If the root-stock is of a vigorous growth, and the graft well chosen, having the wood of the two last years' growth upon it, and from a bearing vine, the graft will always bear fruit the first year, and of the quality of the graft.

Dufour had another mode, common in France, Germany and Switzerland, by splitting the root-stock, and inserting the graft, in the shape of a thin wedge, either end-wise or vertically; but this is less certain of success, judging by my own experience. He sometimes put in two or three grafts, into one large root-stalk, as these may be inserted any where in the wood of the vine, as well as in the pith or centre. A sharp tool, such as a centre-bit tool, is to be preferred to a gimblet, because it cuts the wood more smoothly. Let it be Dufour's mode of engrafting, and no secret, and no matter how many derive a benefit from it. You may publish this, if you think proper.

Very respectfully yours,

HORATIO GATES SPAFFORD.

Mr. EDITOR, I send also the enclosed. It is taken from an article in the Agricultural Reader. The subject is of so much importance, that it should be frequently brought before the farmer. A. W.

Lansingburgh. June. 1830.

ART. CXLI.—*Systematic Agriculture.*

Every vegetable in growing takes something from the earth, which makes it the poorer. Every vegetable in dying and mouldering back again to dust, adds something to the earth which makes it the richer. It is the same when an animal dies. Dust thou art, says God, and unto dust thou shalt return. Every thing which has possessed life, whether animal or vegetable, having undergone putrefaction, and having returned back again to dust, becomes food for the support of vegetable life. This is the reason that newly cleared lands produce so abundantly. "Hitherto," says Dr. Mitchill, "the American husbandman has cultivated a soil, enriched for ages, by the yearly addition of a fresh stratum of mould. From the first existence of vegetation upon the dry land, decayed plants have continually furnished a supply of manure, which the winds and the rain have liberally spread abroad.

"As the supply was annually greater than the consumption, the earth, unexhausted by its production, increased in fertility. The thick layer of vegetable mould which covered the face of the earth was a store-house of food for plants, and the quantity greatly increased by the conversion of wood into ashes. It is not wonderful then, that for some years newly cleared settlements should abound in produce, and require little more labour than that of ploughing and reaping; for during this period the provision is wasting, which for centuries had been accumulating. But the time will come, and indeed in many places now is, when the land, repeatedly wounded by the ploughshare, and exhausted of its richness, shall be too weak, of itself, to make plants grow with their former luxuriance. This may be called *the era of systematic Agriculture*, when men taking the earth from nature's hand, bare of manure, is so to manage and dispose it artificially, that it shall yield him first a subsistence, and then an overplus to grow wealthy upon. How far art may go in this species of improvement is yet unknown, as the *ultimatum* of fertility has never yet been reached. As far as experiments have been made, we find the earth liberally affording its produce in proportion to the labour and skill bestowed in its tillage; and as the ingenuity and invention of man may increase to an unknown and inconceivable degree, so may the improvements and arrangements of husbandry keep pace therewith, until the most fruitful spot that now exists, may produce a tenfold quantity, and the land which now supports an hundred men, give equal enjoyment to a thousand."

ART. CXLII. *Turnips.*

There are two principal sorts, white and yellow. The white sort has many varieties, the principal of which are the white Norfolk, the tankard, the globe, the red Norfolk, and green Norfolk, so denominated from the colour of their skins. Some of the white turnips grow almost under the surface of the soil; others are flat upon the top of it, and others growing very far out of the ground. As food, they are almost all equally valuable; when one variety does not succeed well upon a soil, another may; and for that reason it is always wise, to be provided, on commencing the cultivation of turnips, with various kinds of seed, and by sowing a few drills alternately, upon land prepared in the same way, it will soon be discovered which variety suits the soil best.

The yellow turnips are also of various kinds, two of which are principally sown for crops, the Swedes or ruta baga, and the yellow Scotch turnip; both these kinds are very hardy, and their bulbs, if properly secured during the winter, are perfectly hardy, even in the month of June, which is not the case with white turnips, they becoming light and pithy as soon as they begin to vegetate.

Turnips may be successfully raised upon new land, by broad cast sowing, but the plants should be hoed out at least a foot apart, if they are intended to come to any growth. Good crops may also occasionally be got from reclaimed swamps, where the vegetable mould is sufficiently mellow; but as to the regular

cultivation of turnips, upon old land, it cannot be carried on without manure, and particularly the Swedish turnip, which, to become a fine crop, must have abundance of food itself, but this it amply repays. It is evident that if one variety of turnips succeeds better on a particular soil than another, the farmer ought to be careful to continue his own seed; a negligent man may easily, in one season, lose the exact variety which suits his land, nor need he hope that the seeds-man will be able to supply him with it: the race of seeds-men we have at present, may be fortunate enough to purchase good seed, but with few exceptions, they cannot distinguish turnip from cabbage or rape seed. In order, therefore, that no mistakes may be made on this important point, the soundest and most perfect formed turnips should be selected from the whole crop when drawn, and leaving the roots untouched; the tops should be struck off near the crown, and be buried by themselves against spring.

It is an extremely difficult thing to save a crop when the insects are very thick on the ground, and various things have been mixed with the seed, such as sulphur, soot, fish oil, &c. in the idea that being obnoxious substances, the insects would not come near the plants: until an approved specific is discovered, the following plan is recommended, as one which has been uniformly successful. Whilst the land is preparing for a full crop of Swedes or yellows, to be sown about the first of July, and whites about the 15th or 20th, begin to sow in your garden every second day a small pinch of seed, and watch its progress; as long as the insects devour the plants immediately on coming up, it is not safe to sow; but the moment they begin to relax, which they will do, get the general crop sowed as quick as possible; and if the best and freshest seed be sown on rich land, and moderately thick, a sufficiency of plants will soon get into the rough leaf, out of the reach of the fly, to make an abundant crop. Some, to be sure of a crop, have recourse to transplanting; but the success of this method is so precarious, that it is not to be recommended any further than for filling up vacancies occasioned here and there by the insects. As turnips are considered a very critical crop to get on, I have been very particular as to the method of collecting the seed, and sowing it, which has the sanc- of a long experience.—*Memoirs of Board of Agri.*

ART. CXLIII.—*Public Grounds, and Pleasure Gardens in the City of New-York.* By the EDITOR.

The Battery, at the south western point of our city, where the noble Hudson and the East River unite their waters in opposition to the vacillating sway of the ocean, is a delightful spot, having many attractions to gain our admiration and love of nature's scenery. It forms an irregular figure comprising 10¾ acres. The trees, principally elm, weeping willow, and ball-nut or American sycamore, afford a refreshing shade, and exhibit many of the requisites of beauty, with the exception of a deficiency of variety to produce a desirable contrast. A few firs or pines would give this effect. The walks are wide, clean and hard, well adapted for promenading. The prospect cannot be otherwise than beautiful, combining as it does so many of the requisites for producing pleasurable emotions—having a full view of the bay, enlivened by vessels of all descriptions, of the shores and fields of New Jersey on the right, of Long Island on the left, of Staten Island in front. The Battery is a favorite place early in the morning, but is more frequented in the evening, when from five to twenty thousand people visit it in the course of a few hours.

Castle Garden, built and used for a fort during the last war, and connected to the Battery by a bridge, is one of the most fashionable places of resort in summer evenings. The promenade alone, on the top of the walls, will very conveniently accommodate several hundred persons, and the seats and open space within, as many thousands.

The attractions, particularly of fire works, equal, if not surpass those of any other place of amusement in the city. The refreshing coolness from the water, the beauty of the scenery, the sweetness of the music from the Garden and from the vessels, the brilliancy of the fire works, render the Battery and the Garden the most pleasant and healthful places of resort within the bounds of our city.

At the commencement of Broadway, within a few rods of the Battery, is Bowling Green, a small piece of ground surrounded with an iron railing, and shaded with trees, containing two and a quarter roods.

Still ascending Broadway, for about half a mile, we come to the Park, a triangular space of ten and a half acres, and surrounded with an iron railing. In the centre of the Park, is the City Hall, a noble edifice, having the disgusting jail on the one side, and the hated bridewell on the other, exhibiting an incongruous sight, comparatively as shocking to good taste, as was to humanity, the crucifixion of the two thieves on either side of the Prince of Peace. Until these two buildings are removed, the Park will never correspond to what would naturally be expected of an ornamental ground in so central, fashionable and wealthy part of the city. Owing in a great measure to the soil being made of earth entirely destitute of animal and vegetable matter, many of the trees, particularly the large ones, do not appear in full and vigorous health. Although the Park has been under supervision, and a course of improvement for many years, there is as yet but very little shade. The variety of foliage is not much greater than on the Battery. A row of trees on the edge of the pavement on the south east side, would add greatly to the shade, and much to the comfort of the hackney horses in the summer months.

In the northern part of the city, on the west side of Broadway, is Washington Square, bounded by Fourth, MacDougal, Sixth, and Wooster streets. It is a right angular parallelogram, approaching near to a square, and contains 9¾ acres. Around the outside is a wide walk, at the edge of which is a row of trees. Inside is a belt 30 feet wide of trees and shrubbery. These with those on the outside, will make a most complete and delightful shade. The space within the belt is destitute of trees, covered with grass, and designed as a parade ground. The trees inside of the square are separated from the open space by a fence, which protects the more delicate shrubbery and flowering plants. In the course of a few years, this will be an elegant, fashionable and delightful section of the city. The planting and management of the tree are, we believe, under the direction of one of our first nurserymen. The soil, we should suppose was favorable; and we shall be disappointed, if the trees and plants do not display taste, and exhibit a healthy, thriving appearance. This Square was formerly the '*Potter's Field*,' but will soon be the resort of the wealthy and the gay.

In the upper part of Broadway at the corner of Prince st. is the celebrated garden of Mr. Niblo. The premises are about 200 by 275 feet. In the center on the Broadway line, is the dwelling consisting of two large three story brick buildings. In the rear is the saloon, but for a temporary theatre, having a striking exterior appearance, and a pleasing interior finish. In every part of the Garden are trees, shrubbery and flowering plants. On entering, the visitor suddenly has presented to him a wide walk of the whole depth of the garden, under numerous arches of variegated lamps, supported on beautifully painted transparent pillars. At the end of the walk is a delicate dioramic transparency. On returning back, at the entrance, is a mirror of a height and breadth equal to the walk; giving additional effect and splendor. From this principal promenade are numerous walks, leading to the saloon and other parts of the garden. In the north eastern corner is a cavern, the roof and sides of which are covered with encrustations of crystals of every form, and variety and brilliancy of color, having a most rich and splendid appearance. In the north western corner is a moonlight view of a hermit, in his cell, with a book in hand, and the sacred cross before him. There is a number of very beautiful transpariencies in the garden, and about five thousand lamps, which when all lighted, produce a very pleasing and grand resplendency.

The concerts, and various other means of rational amusement, together with the high character of the proprietor as a manager and caterer, have gained for the garden a reputation which will long insure the continuance and patronage of the respectable and wealthy portions of our citizens.

Mr. Niblo has in contemplation, the erection of a building, on the north side of his house, for the accommodation of the New York Horticultural Society, and on the south side an extensive green house. These, when erected, will add very much to the appearance of the garden, and undoubtedly to its celebrity.

In the north eastern part of the city, at the corner of Rivington and Essex streets, is Essex Garden. It is of a moderate size, but possessing considerable attractions, in the number of its flowering plants, music, and fireworks.

The East River Garden, in the eastern part of the city, fronting Water-street, is a small, but yet a neat tasty place. In addition to its other attractions, the baths which are kept in good order, invite many visitors. The proprietors are entitled to praise for providing thus much for the amusement and health of their fellow citizens.

We will continue the notices in our next number.

ART. CXLIV. *Plants and Seeds, collected by* THOMAS NUTTALL, *in the Southern States,—addressed to the Honorable Board of Visitors of the Professorship of Natural History, Cambridge, Mass.*

GENTLEMEN—In compliance with your request, I beg leave to offer the following statement concerning my late tour through parts of the Southern States which I had not hertofore visited.

On arriving at Charleston, S. C. I commenced my pedestrian journey, and proceeded to Augusta, in Georgia, thence to Macon, afterwards to Columbus, at the falls of the Chatahootshee, on the line of the State; I then continued through the Creek reservation to the town of Montgomery, in Alabama, and at length arrived at Tuskaloosa, the capital of that state; I now proceeded to Cahaba and Greenville, and entering Florida, not far from Pensacola, continued to Tallahassee the capital, from whence I returned thro' the lower part of Georgia, crossing the Apalachicola, Altamaha, and Ogechee, to Savannah. The whole of this inland pedestrian journey was upwards of 1200 miles, occupying me from the middle of January to the close of March. Being the winter season I made all the collections I possibly could of new and rare plants, both roots and seeds—but have to regret the delay of the largest collection of seeds which I had made. This collection likewise contained an herbarium, in which were a considerable number ot new species of plants. I still, however, have the satisfaction to state that all the collections I made in South Carolina, Georgia, and Alabama, as far as Cahaba, have safely arrived at the Botannic Garden, and many of the plants are growing, among which are included several that are ornamental and rare as well as new.

Among them are several fine species and varieties of *Phlox*, not yet cultivated; a very showy new species of *Horse-chesnut*, with scarlet flowers; several perennial large species of *Helianthus* or Sun-flower; several new species of *Silphium*, *Rudbeckia*, and eight or ten kinds of *Liatris*; several species of *Solidago*, *Aster*, and *Vernonia*, peculiar to the South; also *Amsonia angustifolia*, *Podalyria perfoliata*, *P. uniflora*, &c. *Coreopsis senifolia*, and a new species allied to it, *C. stellata*; *Cantua coronopifolia*; a new suffruticose *Cactus*, with large flowers, believed to be hardy; a new *Convolvulus*, with large tuberous roots; an undescribed narrow leaved *Yucca*, *Y. ligulata*; the splendid *Silene regia*; the Sensitive Briar, (*Schrankia horridula*;) a remarkable new species of *Sarracenia*; an undescribed shrub by hardy *Croton*, *Zornia tetraphylla*; a new perennial *Lupin*, *L. strigosus*; the splendid *Asimina grandiflora*, or large flowered Popaw, discovered by the late celebrated Wm. Bartram, never before cultivated, believed to be hardy, being the rarest and most beautiful shrub in the United States; also the *Asimina pygmœa*, of the same author; *Kuhnia critonia*; *Allium odoratum*, *Maloa cordata*, an undescribed species; *Gentiana alba*; a *Treposia*, *Eupatorium album*, a new *Chrysopsis* and *Actinomeris*; a new perennial herbaceous *Sida*; *Smilax pubescens*, *S. laurifolia*; an undescribed large *Lathyrus*; *Hyptis capitata*, *Hibiscus scaber*, with a large yellow flower and deep purple center. Several *Lobelias*, *Polygala latea*; *Tetragonotheca*, *Helianthoides*, *Verbesina virginica*; a new species of *Apocynum* and *Collinsonia*, *Pinguicula lutea*; *Stellaria longipedunculata*, *Viola reticulata*, a new species; *Petalostemon carneum*. *Sanguinaria canadensis*, *rosea*, *Hypoxis setacea*, *Mimulus alatus*, a species of *Pancratium*, *Adiantum trapeziforme*, similar to the West India plant; *Trillium tricolor*, a new species with three colored leaves; a new species of *Calopogon*, *Rexia glabra*, &c.; also a large quantity of seeds in a mixed collection, many of which are now vegetating; as well as a number of other species of plants collected out of flower and fruit, and not yet grown up sufficiently to be recognizable.

A considerable number of the plants which I collected in Alabama and Florida, from the distance they

had to be conveyed, have perished. My collections were always rather select than numerous, and many of the objects could only be obtained by my own unaided conveyance. If any of these collections prove interesting or useful to the institution, my intention will be fully answered.—*N. E. Farmer.*

ART. CXLV.—*Insects—Rose-Bugs—Catterpillars—Minute Ichneumon—Hessian Flies—and Ægeria Pyri.*

Mr. T. W. Harris, in the N. E. Farmer, has addressed a letter, dated Milton, July 10, 1830 to the publishing Committee of the Mass. Horticultural Society, on the subject of insects. With pleasure we transfer it to our columns, as a specimen of what we should like to see scientific men in this section of the country produce.

"The rose-bug, *Melolontha subspinosa*, F. It commences its ravages in this place (7 miles south of Boston) at the time the damask rose puts forth its blossoms. The following is a memorandum of the first appearance of this destructive insect for several years past.

1822, June	10,	1823, June	20,
1824, "	15,	1825, "	10,
1826, "	6,	1827, "	10,
1828 "	10,	1829, "	12,
1830 "	12.		

"Each individual lives about three weeks before the eggs are deposited, soon after which both males and females die. As all the rose-bugs do not make their appearance at once, but continue to increase in number for several days in succession, the whole duration of the species, or the time in which we are afflicted with this scourge, is extended to 30 or even 40 days; the work of destruction, however, is finished, and the greater number disappear in the space of 4 weeks. This year, and in this vicinity, we shall probably find that the rose-bugs have nearly left us by the 22d of July. Immense numbers of these insects were observed here in the years 1825, 1826, and 1827; since which time they have been gradually decreasing and are now still loss numerous and more scattered.

"On the contrary, the catterpillars of the apple-tree, (*Lasiocampa castrensis*, L.) which had been few in number for several years, have returned upon us in hosts. The canker worm (*Geometra vernata*, PECK) has not yet arrived here, nor has it been necessary to use any precautions against it for 13 years past. As the male of the canker worm moth is an insect of feeble powers of flight, and the female is destitute of wings, and therefore incapable of transporting herself to a distance, it seems that the migrations of the species must be very slow, and their ravages will, accordingly, be confined to the particular localities in which they first appear, for a long time before places at a distance from these will suffer from their visitations. We should all, however, watch narrowly for the first appearance of the evil; and resort, without hesitation, to the only known and effectual remedy, which consists in the careful and repeated application of tar, both in the spring and early part of winter; and, when the insects are numerous, it may be necessary to tar both in the afternoon and late in the evening.

"Much has been said respecting an insect that attacks barley, and several communications on the subject have been published in the New England Farmer. Through the politeness of Cheever Newhall, Esq., I obtained a few pieces of diseased barley straw, containing several worms or larvæ which were new to me. Each larva was imbedded in the substance of the stem, in a little longitudinal cavity which it had formed for itself, and its presence is known by an oblong swelling upon the surface. In some pieces the swellings were so numerous as greatly to disfigure the stem, the circulation in which must have been very much impeded if not destroyed. These larvæ were carefully watched, and early in the spring were found to have entered the pupa state. On the 15th of June the perfect insects began to make their escape through minute perforations which they gnawed for that purpose. Seven of these little holes were counted in a piece of straw only half an inch in length. The perfect insects continued to release themselves from their confinement till the 5th of July, since which no more have been seen. Much to my surprise these insects proved to belong to those called by Linnæus *Ichneumons minute*, minute ichneumons, which are parasitic, or prey in the larva state, upon the bodies of other insects. I had hoped to have obtained the *true culprits*, which probably are allied to the *Hessian flies*, but the *ichneumon* had attacked them, depositing an egg in every one, the larvæ from which had destroyed those of the *fly*, and, having completed their metamorphoses, have as before said, made their escape from the straw in the perfect state.

"These little ichneumonswere examined and carefully compared with descriptions of other similar insects, whence it appears that they are a species, which have not been described. They are very much like the parasitic insect which attacks the grubs of the Hessian fly, belong to the same genus, but are rather larger insects, of a jet black color, except the legs, which are blackish, with pale yellow joints. The female is thirteen hundreths of an inch in length, the male is rather smaller. These minute insects, then, are among our friends; they are those which an allwise and provident Creator has appointed to check the increase of the fly that attacks our barley; and though disappointed in obtaining the latter in its perfect state, I hail with pleasure the appearance of its mortal enemy.

"Although the *Barley fly* has uot been obtained in the perfect state, there does not exist the smallest doubt in my mind that it is a two-winged insect like the *Hessian fly* of America and the *Wheat fly* or *Tipula* of Europe. Any one who will compare the history of the two latter with what is known of the Barley insect, will arrive at the same conclusion. Both the Hessian fly and Barley insect make their attack upon the culms or haulms of our cereal productions, which they disfigure and injure to a great extent; and both have a similar four winged parasitic ichneumon appropriated to them. In addition to this statement the following conjectures, in default of facts, may be offered. It is probable that the Barley insect is a *distinct species* of the same genus (*Cecidomyia*) to which belong the Hessian fly (*Cecidomyia destructor*, Say) and wheatfly, (*C. tritici*, Kirby.)

"That it is of the same genus may be conjectured from the similarity of habit, and from its having a similar parasite. The Hessian fly deposits eggs, and

the grubs proceeding therefrom are situated *between the sheathing bases of the lower leaves and the haulms of the wheat.* Whereas the Barley insects are found to *penetrate the haulms themselves, and lie concealed beneath the epidermis.* From this slight difference in the mode of attack it would appear that the insects *are not identical*; and this conjecture is still further strengthened by the fact that the parasite of the Barley insect *is not the same species* as that of the Hessian fly.

"Agreeably to established usage a specific name and character may here be given to this newly discovered parasitic insect.

"*Ichneumon* * *Hordei.* Black, slightly hairy; head and thorax granulated, abdomen smooth, polished; thighs at tip, legs and feet at base pale schreous yellow. Length about twelve hundreths of an inch.

"We have reason to believe that the grubs of the Barley fly remain in the straw during winter, and that they assume their perfect forms in the spring, in season to deposit their eggs on the young Barley. It is therefore essential to prevent their assuming the perfect state, and this may be done by burning the stubble, which contains many of them, in the autumn, by destroying, in the same way, all the straw and refuse which is unfit for fodder, and by keeping the grain in close vessels over one year. In this way the insects, which are disclosed from the small heavy pieces of straw remaining unwinnowed from the grain, will perish without an opportunity of escape.

"There is an insect which has lately been discovered in the trunks of the pear tree, feeding beneath the bark. It is said that considerable injury has resulted from its attacks. An infested tree may be recognised by the castings thrust out of the minute perforations made by the larvæ; if the tree be whitewashed the perforations (about the size of awl-holes) and castings are still more readily discovered. Mr. Downer furnished me with some of these insects which had changed to the pupa state under the bark, enveloped in little cylindrical brownish cocoons, consisting of fibres of the dark interwoven with a silky substance. This was during the summer of 1829, and in the autumn the perfect insect extricated its head and legs from its pupa-shell, perforated its cocoon and the bark, and finally made its exit, leaving the old pupa-skin sticking half way out of the hole in the bark, where it was retained by the transverse series of little spines crossing its posterior half. This insect belongs to the genus *Ægeria*, well known as containing in it the noxious borer of the peach tree. The species bears a considerable resemblance to the male of that insect, and is still more like the currant bush *Ægeria*, but is much smaller than either of them. It may be named and defined,

"*Ægeria Pyri.* Body black, with a bluish gloss; palpi, breast, fore legs, intermediate and posterior thighs and feet, (except at tip,) and three narrow hands across the abdomen pale golden yellow. Wings transparent in the middle; the nervures, margins, together with the broad tip and small transverse somewhat triangular hand on the anterior ones covered with opaque brownish scales and hairs. A small metallic spot on the transverse band near the posterior margin, and tip exhibiting some metallic reflections.—Length three tenths of an inch.

* This insect is not an *Ichneumon* as the genus now stands; but, as there are some doubts relative to its true place in the modern arrangement of these insects, I prefer retaining it in the old genus to which Linnæus would have referred it. Mr. Say would probably call it a *Ceraphron*, while I am rather disposed to arrange it, and the parasite of the Hessian fly, in the genus *Eurytoma*, as defined by Laticille and Dalmann. It may be mentioned that this little insect possesses the power of leaping, but without any enlargement of the posterior thighs.

[For the New-York Farmer.]

ART. CXLVI.—*An academy wanted for Belles lettres, Taste and Inscriptions. In a letter from Samuel Mitchill to a friend, dated New-York, July* 24, 1830.

In our conversation the other day concerning the introduction of a correct taste in public works, the incorporation of the academy in France for Belles lettres and Inscriptions was considered. The propriety of having some such body in this country was very apparent.

There are so many incongruous things among us, that the eye and the understanding are constantly offended.

The subject may be illustrated by several prominent examples.

1. Our patriots must not be startled nor affronted, if a criticism is made upon their staff and cap of liberty. The person, whoever he was that introduced them to our people as emblems of freedom, committed a fundamental error. They were borrowed from the ancient Romans. In that nation, domestic slavery existed, yet the master possessed the right of manumission; on discharging a slave there was a performance of several ceremonies, among which were putting a cap on his head and a staff in his hand. By those, the master signified his will that the slave should become free and be capacitated to enjoy the privileges of a citizen. Such was the act of emancipation, as we are told, from domestic servitude.

Now, the late British colonists, and provincials, though subjects of the crown, never were the property of owners or masters. Consequently they were not the objects of manumission. They were not even in political bondage, for when threatened with it, they resolutely flew to arms, and avoided it. My surprize is, that a free and independent people ever adopted such humiliating and degrading badges; and that having committed so gross an error in doing so they persist in the continuance of it. I never look at one of our capped liberty staves without disgust, arising from the consideration that they refer to a low and and mean condition, in which neither the present generation, nor their predecessors were ever placed. They ought all to be cut down, or used merely to support vanes and flags. For such signals they are very appropriate.

2. Another offensive spectacle is presented by the posts of cast iron, which form the fence or enclosure around one of the modern and fashionable public squares in New-York City. They exhibit the *rods* and *axes* (fasces et secures) carried in old times, by the lictors before the Consuls and the Dictators of Rome. Those officers who had very high and extensive powers, walked with every accompaniments

affirm that the rods which were originally made of birch were, intended to scourge, and the axes to be head offenders.

for the sake of awing the multitude. For antiquarians The lenity of our laws saves the worthy convicts from these punishments. Stripes are not permitted on the back; nor is the body severed in two at the neck in any case. The impropriety of placing the figures of those cruel and exploded instruments of punishment before us, are calculated to excite disagreeable associations in the mind, as must be evident to every classical and considerate beholder. They ought all to be carried back to the foundry, and cast into more appropriate forms.

3. The association of venerable artizans, who have taken their name from the Roman Cincinnatus, have been thought to have fallen into a small error in the later motto of their seal. That great chieftain when summoned into the military service of the republic, is represented as leaving his plough and home, while these are the words that denote the state of his mind on the occasion, namely, "omnia relinquit servare patriam," *leaves all to serve country.* The regular meaning of this is, that he *leaves his to be served by all things, and not by himself.* If the author of the sentiment intended to signify the services of Cincinnatus, he might have written it, 'omnia relinquit, *ut servaret* patriam.' But, even this would have been incomplete, inasmuch as the pronoun *ille* ought to have been there as the nominative case to the verb. There would, after all, have been more point and conciseness in the words, 'Totus pro patria,' *wholly for the country.*

Out of these considerations grows another. The professors of our religions call them Christians, and not Christs. Loyola named the society of which he was the founder, Jesuits, and not Jesuses. But our brave and worthy citizens, instead of deriving their denomination in some such manner from their illustrious model or prototype, constitute themselves, each a Cincinnatus. A further illustration may be made in our protestant reformers who do not designate themselves as *Luthers and Calvins*, but with incomparably more fitness as "Lutherans and Calvinists."

These examples, however, must suffice for the present.

ART. CXLVII.—*The Roller Plough—Invented by* A. ALLEN, *of Troy, Penn.*

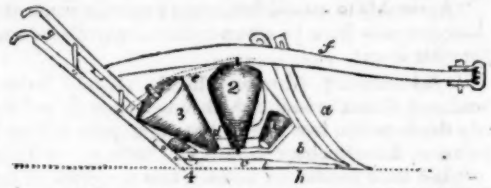
Sir—I have been experimenting upon the plough, and although so many improvements have been made, I conceive there is yet room for valuable improvements. The improvement that I have made is calculated for grass ground; it operates in turf soil to admiration. I have not tested it in light, mellow or sandy ground sufficient to determine its efficacy. Making allowance for the predilection that a person's own inventions naturally inspire, and also judging from the expressions of those who have seen it operate, I have the fullest confidence in its utility. If you or any of the members of the Horticultural Society feel disposed to put one of them in operation to try its efficacy, and should esteem it a useful improvement, I will convey to the Horticultural Society the right of the city and county of New-York, for using and manufacturing them. I have secured it by caveat, and intend to take out a patent.

In case you go on and put them into use you may consider this a voucher in favor of the society—the consideration is having it proven and put into use.

Yours with much esteem,

Mr. S. FLEET. ADOLPHUS ALLEN.

The diagram represents the furrow, or mould board side of the plough; *a.* the coulter, which rests in a groove in the share; *b.* the share, with a bear's mouth or rabbit in its nose; *c.* the lower latteral bar, to hold the rollers; *d.* the left hand latteral bar



or land side; *e.* the upper latteral bar which holds the top of the rollers; *f* and *g.* the beam and handles; *h.* the knife or cutter on the bottom of the share, 1, 2, 3, 4, 5, the several rollers which speed the plough.

Specification of the Roller Plough.

This plough operates without a mould board. The furrow is raised and turned over by means of rollers which do the office of mould-board and are designed to render its propulsion through the ground much easier and at the same time to leave the ground more comminuted and mellow than the ploughs now in use. It is composed of a beam and handles as usual, with a share of cast or wrought iron which rises in the same manner that the common shares do until it is elevated about 5 or 6 inches from its base, it then terminates something like the posterior edge of a bull-plough share. From the bottom and right hand side of the share a projection or elongation extends out obliquely backwards in the direction of the lower edge of the common mould board. Its office is to sustain the rollers. It may be called the right inferior lateral bar. In this bar there are two or more foramen, or holes nearly equi-distant from each other and corresponding with the number of rollers. In the posterior end is a step or place to descend the lower end of the right handle. Over this bar, and in the same direction of the upper edge of the mould-board of a common plough, though something nearer the beams, is a bar which extends from the top of the share to the right handle and is designed to hold the upper end of the rollers. This may be called the right superior lateral bar. The rollers which are substituted for the mould-board and that turn the furrow over, are of pyramidal form having the base placed superiorly like an inverted cone. The axis of the first or anterior one may stand obliquely to the left and forwards at an angle of about 30 degrees with the base or bottom of the plough, its upper surface being elevated a little above the share. The axis of the 2d may form an angle of about 60 degrees with the base, and the posterior one may stand nearly vertical which will bring the periphery on the right and posterior side at an angle of something like 20 degrees to the right, or sufficient to turn the furrow. These rollers should be so formed and arranged that the spiral or winding surface of the rollars in connexion shall correspond with the form of the common mould-board. They should be far enough asunder to prevent the dirt from clogging them. They may be from six to eight inches in diameter at the up-

per end, and about two inches at the foot, with a gudgeon at each end, the posterior roller may be incurvated to give the furrow a convex surface, behind each roller there may be a scraper to cleave the dirt off. The land side may be a bar of cast or wrought iron, near the posterior end is a step or place to which the left handle is secured. In front of this is a small perpendicular roller to impinge against the land side; near the base and back part of the plough is a horizontal roller which revolves in the furrow and supports the plough.

This roller may be three inches in diameter and occupy the space between the land side, or left and right hand lateral bars. When the share is of cast iron the front part of it may be formed to receive a cutter or knife which may be adapted to the form of the share and may be cast iron, or wrought iron faced with steel, the coulter may also be composed of wrought iron faced with steel, and at the point be connected with the share. This plough is designed chiefly for ploughing turf or sward ground and prairie, and may be longer and the angle of the share more acute than the common plough. My improvement in the plough consists in the substitution of *rollers* for the mould-board in turning the furrow and also the rollers to overcome the resistance occasioned by the friction or collision of the plough against the earth. The rollers applied to the plough as above specified, I I claim as original inventor. Their number, size, figure, fixtures and adaptations I reserve to myself the right to vary. ADOLPHUS ALLEN.

HAWARE SPALDING, } *Witnesses.*
NATHANIEL ALLEN, }

ART. CXLVIII.—*The Unhealthiness of Cucumbers.*

In regard to this vegetable, which, at the present season, forms, with our citizens, so prominent a dish at every meal, Mr. Abernethy, the celebrated surgeon, observes, "peel it, slice it down into pieces, put vinegar and pepper to it, and then—throw it away." And this, probably is, the very best advice that can be given in reference to the manner of using it. Almost entirely devoid of any alimentary principle, the only possible motive that can be assigned for eating the cucumber, is merely the gratification of the palate—to the nourishment of the body it is totally unadapted.

The principal mischief produced by the use of this fruit, and which has caused it to be ranked among the most unwholesome articles served at our tables, arises independent of an acrid principle which it is supposed to contain, from its indigestibility; in other words, its insolubility in the stomach. In consequence of this it is retained in the latter organ for a long time, producing more or less uneasiness in every instance; and in the dyspeptic, the gouty, and those of a nervous and feeble constitution, giving rise to violent pains, cramps, and other severe affections.

By an individual in full health, and engaged constantly in active out-door exercise, but little inconvenience would probably be experienced from the use of the cucumber, in any form. By all, however, under different circumstances, it is an article of diet which it would be well entirely to relinquish, whether in its simple state, or in the various modes of preparation by which its injurious effects have been attempted to be counteracted.—*Jour. of Health.*

Remarks by the Editor of New-York Farmer.—We must confess that we are ignorant whence the learned conductors of the Journal of Health obtained the knowledge, thatthe cucumber for the 'nourishment of the body is *totally* unadapted.' They say because it is almost entirely devoid of the 'alimentary principle,' and remains a long time in the stomach undigested. Admitting that what constitutes the alimentary principle is clearly established, we would ask, if the nourishment or good effect of the food on the body is in exact proportion to the quantum of this principle?' Is it essential for health that all the substances entering the stomach should be equally easy of digestion? We are confident that neither of these questions can be answered in the affirmative. The flavor, the sensations produced, the temperature of the food and its capacity for caloric, and the effect on the other food in the stomach, should be brought into view when considering the first question. As it respects the second, it is known that there is a very great variety in the digestible properties of our food.

To decide against the healthiness of cucumbers, merely because they remain in the stomach sometime, is about as rational as it would be for a Pennsylvania farmer to declare that gypsum did vegetation no good, because it remained in the ground unconsumed. Keep up a proper supply of vegetable and animal matter in the soil, and although the gypsum is hard of digestion, yet by its agency, the crops will ever continue to have a healthy growth.

Sinclair, in his *Hortus Woburnensis*, has by chemical experiments, declared with numerical nicety, the nutritive properties of grasses, yet no intelligent farmer would think of finding the *fattening* qualities to accord exactly with the results obtained by Mr. Sinclair. Indeed, in many instances, the experience of farmers is the reverse of his deductions. With all deference and respect for the conductors of the Journal of Health, there is, in the present state of the sciences, much quackery in deciding the healthiness of food from what is considered the alimentary principle.

Now for our own experience—For many years we have been in the habit of eating cucumbers, and do not recollect of having experienced the slightest inconvenience. This season, we commenced eating them moderately once and sometimes twice a day, about the commencement of the excessively hot weather, the present month. Our appetite was sharpened and has continued keener, attended with no uneasiness, although we take very little out-door exercise, giving us additional strength, so much so, that at no season of the year have we felt as well. We generally eat them with onions, being careful to have little or no fruit or other vegetables of hard digestion in the stomach at the same time.

ART. CXLIX.—*Proceedings of the Inspecting Committee of the New-York Horticultural Society.*

July 6th. Mrs. Winter, of Flushing, sent a lot of fine Antwerp Raspberries, also of Gooseberries, 12 of which weighed 7 oz. 5 dwts. 7 grs; one weighed ½oz. 4 dwts. 17 grs.

Mr. Cooke, six ripe free-stone Apricots, and a number of flowers, among which were Lychnis calcedonica, Coreopsis tinctoria, and Digitalis purpurea.

Dr. Hosack, from the open ground at Hyde Park, a dozen very fine Tomatoes, and some early Celery.

Mr. Floy, Yucca filamentosa, Passiflora olata, Wellington Geranium, Nerium splendens, and others.

Mr Prince, ninety varieties of Carnations, Iris hexagona, Phlox excelsa, &c. &c.

Mr. G. Still, a lot of Antwerp Raspberries.

July 13th. Mr. Cooke presented a large dish of ripe Apricots, and a boquet of flowers, among which was Paris white Dahlia.

Mr. T. Bridgeman, a sample of the Vicia faba or English Broad Beans, consisting of four varieties, Early Magazine, Early Long Pod, Green Nonpareil, and Broad Windsor. Two and a half quarts of the seed produced eight bushels of pods. The whole amount of labour bestowed did not exceed one day's work, including the planting. They were put in the ground on the 24th of March, in a low clayey soil. Mr. B. commenced gathering them on the 3rd of July.

Mr. Wilson, a sample of a new Pole Bean, sent to Mr. Grant Thorburn by the London Horticultural Society.

Mr. Oakley, some very fine ripe Harvest Apples.

Mr. Hogg. a dwarf Dahlia, called Alexander Victoria, Feronia latilobium, and four seedling Hollyhocks.

Mr. Combault, three crimson and orange Dahlias.

Dr. Pascalis, three specimen leaves of the Morus multicaulis, or Chinese White Mulberry, each 10 inches long by 9½ wide. They were from a tree presented by him to the Society, and now under his care.—They have a very delicate silky appearance.

ART. CL.—*Miscellaneous.—Original and Selected.*

Calendar of Flora.—I am much occupied in ornamenting a little cottage in the neighbourhood of the city, but find much difficulty in ascertaining what flowers to select in order to have a succession from spring to the autumn. I have searched in many gardening books in vain for information, and it is only from the exhibitions of the Horticultural Society, as printed in your Repository, that I have found any useful hints on this subject. If too much occupied yourself, I am sure that Messrs. Wilson, Floy, Hogg, and many others of our intelligent gardeners, could furnish an excellent calendar of Flora, expressly for this latitude. It is much wanted by many of my neighbours, and if accompanied with a few concise hints, as to the mode of culture, &c., would be still more acceptible. A judicious work of this kind, not copied from any foreign publication, would sell readily.

With many thanks for the pleasure and instruction I have frequently derived from your useful Repository, I am Sir, your obedient Servant,

N. York, July 27, 1830. PHLOX.

Remarks by the Editor.—Mr. Wilson, who suggested the subject to us more than a year ago, will answer 'Phlox' in our next number. We should suppose that some aid might be obtained from Louden's Encyclopedia of Plants, by calculating for the difference of climate.

Fair of the American Institute.—On the 12th 13th and 14th of October, the American Institute of this city, intend having an Exhibition of American Manufactures and products—Diplomas and medals will be awarded to the most successful competitors.

The Crops.—Until about the 20th of this month, so much rain had fallen during the preceeding 30 days, that no opportunity was afforded for gathering the ripening crops. From the 20th to the 28th there has been much clear weather and excessive heat, the thermometer ranging in the shade from 88 to 94 throughout the Middle and Eastern States. Although these few days have been drying, yet the heat rendered the labour of securing the harvest much more toilsome and oppressive. The crops are spoken of as being very abundant throughout the U. States, with a few small local exceptions, where the insects suddenly destroyed the promising wheat fields. In some portions of the southern states, there has been a deficiency of rain, but not to an extent very materially to blast the hopes of the planter. The excessive moisture greatly retarded the growth of corn. A correspondent says the corn, in Oneida and Onondago counties, was about a foot high, on the 12th inst, and that some farmers were ploughing up their corn fields. The following is taken from the National Intilligencer.

"Frederick county, in Maryland, it is stated, will yield wheat enough for 200,000 barrels of flour. The produce of one county alone in New-York, (Dutches) is estimated as sufficient for the whole population of the State. Plenty every where smiles on the land—east and west, north and south. The Georgia Patriot says, there never have been known such crops of small grain in the State, as it had been blessed with the present season. The wheat and rye have generally been reaped and saved. The crop of oats is very heavy and will soon come in. Wheat is worth about 50 cents per bushel, and Indian corn has already been offered at 12½ cents."

Preserving Vegetables Green for the Winter.—Take green corn, either on the ears, or carefully shelled, peas, beans in pods, and dip them into boiling water, and then carefully dry them in a room where there is a free circulation of air. Thus preserved, they will keep until winter, and retain all their freshness and agreeable flavour. M.

New-York, July 28th 1830.

Tree or Cow Cabbage.—(See N. Y. Farmer, Vol. 2. p. 121.) In a communication to the Virginia Free Press, a lady, (who signs herself a subscriber to that paper, and is also one to the American Farmer,) gives the following account of her culture of this plant.

"I sowed a few of the seeds in my garden early in May, 1829, the seed germinated quickly, and produced thirty plants, twenty of the plants I transplanted in the first week of October following, placing them two and a half feet apart—eight of the plants I did not remove, suffering them to remain the same distance apart of those I transplanted—all remained through the winter without shelter of any kind, and only two stalks killed by the frost. Those not transplanted are most luxuriant, some of them are at this time nine or ten feet high—those transplanted are from four to five feet high. Mr. Tracher speaks of this cabbage being very valuable as provender for cows. That may be so, I have not tried it in that way, but think it may answer a good purpose: I can speak with certainty from experience, and say, that it is very valuable for table greens, called in Virginia "sprouts." It was ready for use last spring before any other greens, one stalk will produce more than a bushel of sprouts."

"Mr. Tracher speaks of this cabbage living four years. Dr. Mease, when he transmitted the seed, said

they would live three years. I cannot say how long they may live. This is only the second year since those in my garden were planted; they are now loaded with seed, and the stalks appear on the decline.—I rather incline to the opinion it will only last two years, but am by no means positive, as there are at this time among those in my garden, many young shoots springing from the roots of the old stalks."

Silk Worms.—Mr. Nicholas Noris, of Baltimore county, has, at his farm, Mulberry Grove, situate about two and a half miles from town, on the York road, 50,000 worms now engaged in spinning silk.—*N. E. Farmer.*

Chili Onions.—J. P. Donaldson, Esq. just arrived from Huasco, Chili, has presented to the Editor of the American Farmer, an Onion, which he brought from Chili, measuring sixteen inches in circumference, and weighing twenty-two ounces and a quarter. It had begun to decay, and had lost without doubt an inch in measurement, and three or four ounces in weight. Mr. D. had other onions in a state of perfect preservation. What is most remarkable is the fact of these onions having been preserved during so long a voyage. The onions are evidently of the Portugal kind, and are very mild Mr. Donaldson informs us that they preserved water-melons, taken on board at Huasco, till they arrived at the latitude of Charleston, when the last one was cut, and proved to be excellent. *Ibid.*

India Rubber.—This valuable product, first made known by La Condamine, in 1636, is the juice of several species of trees growing in South America. It flows from the trees as a milky fluid, which soon hardens upon exposure to the air. Various attempts have been made to transport it to Europe in its fluid state, without success. Its application to the arts is various, but until recently, no advantage has been taken of one of its remarkable properties, its elasticity. Two ingenious chemists of Paris, Messrs. Rattier and Guibal, by an entirely new solvent and a very delicate process, have succeeded *in spinning it into threads of various sizes.* This is subsequently woven into suspenders, garters, surgical bandages for ruptures, fractured or dislocated limbs, &c.—*Ibid.*

Exports of Cotton.—The Savannah Georgian contains a comparative statement of the exports of Cotton of the present and past seasons, from Louisiana, Alabama, Georgia, and South Carolina. It appears that during the six months ending April 1, 1830, and the same period, 1829, the number of bales exported was as follows;

To England. 1830. 222,893. *France.* 107,029. *Elsewhere.* 20,209. *Coastwise.* 121,231. *Total.* 472,465. *To England*, 1829. 238,492. *France.* 69,851. *Elsewhere.* 11,928. *Coastwise.* 96,256. *Total.* 416,522.

In the exports to England there has been a decrease of 15,599 bales, while the total increase this season is 55,933 bales.

The quantity of Sea Island Cotton exported during the same periods, is as follows:—

To Liverpool. 1830. 5,270. *Havre.* 2,132. *Other Ports.* 979. *Total.* 8,381. *To Liverpool*, 1829. 19,325. *Havre.* 2,821. *Other Ports*, 1,036. *Total*, 23,192. *Decrease to Liverpool*, 4,055. *Havre*, 709. *Other Ports*, 57. *Total*, 14,811.

The stock of Sea Island at present on hand, is at Savannah, 4,533 bales, and at Charleston, 6,784 bales: total 11,317 bales.—*Nat. Jour.*

Salt in Rural Economy.—In Spain, they give their sheep salt with great regularity, 112 lbs. in five months to one thousand sheep. Mr. Curwen, M. P. for Cumberland employed salt to his live stock daily for years; for horses, he gives 6 oz. per day; milch cows, 4 oz.; feeding oxen, 6 oz.; calves, 1 oz.. sheep, 2 to 4 oz. per week—if on dry pastures; but if they are feeding on turnips or coles, then they should have it without stint. Some give it to live stock on a slate stone—some lay lumps of it in the cribs or mangers. Mr. Rusher, of Stanley, Gloucestershire, in the autumn of 1828, purchased, for a mere trifle, twenty sheep; decidedly rotten, and gave each of them for some weeks, an ounce of salt every morning. Two only died during the winter; and the surviving eighteen were cured, and have now (says our informant) 'lambs by their sides.' Mr. Butcher, now of Brook Hall, Essex, for years employed salt for his cattle and sheep, on his farm near Burnham, in Norfolk. One of the fields was so unfavourable for sheep, that before he used salt, he had lost ten or twelve sheep in a night when feeding on turnips; but after he had adopted salt, he never lost one. Although the use of salt for live stock is now becoming quite general, yet the enlightened farmer must not suppose that its introduction, even for that important purpose, was the work of a day.

The very magistrates were opposed to its use; for, only a few years since, some honest farmer's servants were taken before a justice of the peace at Winchester, charged by their ignorant master, with the dreadful crime of giving his horses salt in their corn. 'I should not have suspected it,' said the farmer, 'had not my horses' coats become so fine lately.'—'Salt for horses!' exclaimed the indignant magistrate; 'can any thing be more poisonous? Let the rascals be committed to Bridewell for a month.'—*English Pa.*

Productions of Liberia.—In the address of the colonists at Liberia to the free people of colour in the United States, we find it said that, "Cattle, swine, fowls, ducks, goats, and sheep, thrive without feeding, and require no other care than to keep them from straying. Cotton, coffee, indigo, and the sugar cane, are all the spontaneous growth of our forests, and may be cultivated at pleasure, to any extent, by such as are disposed. The same may be said of rice, Indian corn, Guinea corn, millet, and too many species of fruit to be enumerated. Add to all this, we have no dreary winter here, for one half of the year, to consume the productions of the other half. Nature is constantly renewing herself, and constantly pouring her treasures, all the year round, into the laps of the industrious."

To Destroy Worms.—The best method I have found of destroying the worm in carrots is, by watering between the rows, in June, with sea-water; a large garden panful to about 9 to 10 yards a row; after which, a watering of common water, from the rose of a pan, will be useful to wash the tops: this to be done in the evening in a dull day. In all probability, lime water would have the same effect.—*Louden.*

Boiling Potatoes.—Potatoes, after being washed, may be put on to boil in cold water without being peeled. When half done, the water may be poured from them, and fresh cold water added, which is also to be

poured away when they are boiled sufficiently. They are then left by the fire to dry for a short time, before the skins are taken off, and will be found more floury when boiled in this way, than when the water is not changed. This quality, so valuable to those who make the principal part of their meal of this vegetable, and which renders them a better substitute for bread, may be considered as making amends for the greater length of time in cooking, and, consequently, larger consumption of fuel.—*Ibid.*

Lucerne.—A plot of ground about 400 square yards, sown with lucerne, and mowed once over, will keep a cow for 4 weeks. When it comes into full bearing, it will always be fit to mow once over by the 1st of May, and will serve through that month; and, if sufficient to grow a month after cutting, it will be fit to mow again, and will then serve other four weeks.—*Ibid.*

Roller Used in Measuring Grain.—The revised statues require that a roller, instead of a square edge, shall be used in striking grain that is measured in a half bushel or other measure. The square edge, it is said, will draw off a pint of corn, or three gills of oats below the even surface, while the round one makes it exactly level.

By the same, 2000 lbs. weight, instead of 20 cwt. make a ton.—*Utica Paper.*

Shepherd's Dog.—The drover and the shepherd are very different persons; and, in gentleness, the drover's dog and the real shepherd's dog are equally unlike. Some of the finest dogs in the world are those which watch the Merino sheep upon the Spanish mountains. They wear large collars with spikes, to protect them from the attacks of the wolves; and they conduct their flocks with a gentleness which is only equaled by their courage. When they return to the folds, the dogs bring up the stragglers without violence; and the man walks at their head, in the true pastoral style, so beautifully described in the Psalms: "The Lord is my shepherd; I shall not want. He maketh me to lie down in green pastures; he *leadeth* me beside the still waters."

Sagacity of Wolves.—Whilst the deer are quietly grazing, the wolves assemble in great numbers; and, forming a crescent, creep slowly towards the herd, so as not to alarm them much at first; but when they perceive that they have fairly hemmed in the unsuspecting creatures, and cut off their retreat across the plain, they move more quickly, and with hideous yells terrify their prey, and urge them to flight by the only open way, which is towards the precipice; appearing to know that, when the herd is at full speed, it is easily driven over the cliff—the rearmost urging on those that are before. The wolves then descend at their leisure, and feast on the mangled carcases.—*Franklin's Expedition to the North Sea.*

Destruction of Animal Life.—Some idea of the destruction of animal life, to provide for the comforts and luxuries of Europeans, may be formed from the statements which we gather in Captain Franklin's Narrative of his Journey—that, in 1822, the Hudson's Bay Company imported 3000 skins of the black bear, 60,000 of the pine marten, 1800 of the fisher (a species of sable,) 4,600 of the mink, 7,300 of the otter, 8,000 of the fox, 9,000 of the Canadian lynx, 60,000 of the beaver, 150,000 of the musk rat; besides smaller numbers of the skins of wolves, wolverines, badgers, and racoons.—*Library of Entertaining Knowledge.*

Great Variety of Vegetable and Animal Life.—We thus see that, up to the present time, we have about *one hundred and twenty-five thousand different species* of animal life described by modern naturalists; and probably, exactly in the proportion that their labours have gone far beyond the bounds of discovery contemplated as possible by early inquirers in the same fruitful field, will the discoveries of future naturalists show that this vast enumeration which we have just stated, is equally short of the complete account of the results produced by the extraordinary fecundity of every department of nature. The more minutely we examine the neighbourhood in which we live, nay even a single bed of the very garden, or the smallest portion of the very field, in which we ordinarily walk,—the more will our attention be repaid by the discovery of some new and surprising variety of existence. Ray, with that candour and modesty which is the great characteristic of a philosophic mind, says, "Having this summer, anno 1691, with some diligence prosecuted the study of our English insects, and making collections of the several species of each tribe, but particularly and especially of the butterflies, both nocturnal and diurnal, I find the number of such of these alone as breed in our neighbourhood (about Braintree and Notely in Essex) to exceed the sum I last year assigned to all England." In the same spirit, Linnæus, one day herborizing with his pupils, covered with his hand a green turf, saying that he had that under his hand whose consideration might justly occupy all of them for a considerable portion of their lives. He verified this assertion by shewing that within that space there were thirty-four different species, either of grass, or moss, or insects, or animalcules, or varieties of mineral. "How then," continued Linnæus, "shall we estimate the total production of the entire globe, when the little space that my hand covered is found to contain so many various objects?"—*Ibid.*

Food of the Camel.—During the winter, the working camels of Pisa are fed with hay, in large stables; but during the remainder of the year, they are turned out to pasture with the rest, who remain without shelter during all seasons. The green and tender grass, which other cattle eat with so much avidity, is neglected by these camels; but they greedily devour the leaves of the oak, of the cork oak, and of the alder, and feed with manifest delight on every hard and dry substance which they can find, such as the thorn, the thistle, and the broom. They drink only once a day. *Ibid.*

Average Price of Vegetables sold at Washington Market, for June 1830. [Corrected for the N. Y. Farmer, by J. Matheson, Gardener.]

Green-peas, from 37½ to 62½ cts per bushel. *New Potatoes*, from 25 to 73½ cts per bushel. *Cabbage*, from 25 to 75 cts per doz. *Lettuce*, 12½ cts per doz. *Radishes*, 16 bunches for 12½ cts. *Carrots*, 3 cts per bunch of 8. *Beets*, 3 cts per bunch of 5. *Onions*, from 18 to 24 bunches for 12½ cents. *Water Cress*, 12½ cts per half peck. *Bush Beans*, 37½ cts per bushel. *Turnips*, from 3 to 5 cents per bunch of 10. *Cucumbers*, 50 cts per hundred. *Squashes*, from 50 to 75 cts per hundred. *Green Corn*, 75 cts per hundred. *Tomatoes*, 25 cts per half peck. *Egg Plants*, from 4 to 8 cts per piece. *Peppers*, from 50 to 75 cts per hundred.